Redundancy formula is near

by David Jobbins

A compromise deal which could end the doubts over the status of the redundancy procedures agreement for college lecturers is believed to be near.

The initiative came from education authority employers' officials and was instrumental in averting embryonic moves within the leadership of the National Association for Teachers in Further and Higher Education towards withdrawal from the national joint council on conditions of service.

The compromise being explored by officials from both sides would have the effect of emphasizing that the agreement, reached between Natfhe and the Council for Local Education Authorities in the mid-1970s, is binding on all the authorities who have already operated it, or indicated that they would.

Negotiations on the position of the remaining 20 or so who have baulked at the agreement would continue.

The deal would preserve the cardinal point for the union side that the great majority of the 104 authorities would be bound to honour the one-year notice of redundancy specified in the agreement with CLEA. The advantage to the management side is that it would remove an area of deep-seated doubt among lecturers at the ability of the NJC to act as an authoritative negotiating forum.

It would form the base from which union negotiators are likely to seek a range of further—and as vital—rights in the event of redundancy, covering all education authorities. The deteriorating picture of possible redundancies has demonstrated a lack of uniformity nationally on issues which do not bear on the right of notice, such as determination of redundancy and selection of individuals.

The proposal is that while the agreement would remain an appendix of the codified document setting out lecturers' conditions of service, the main text would make clear that it is a recommendation accepted as binding by a specified number of authorities.

Obviously, lists of those authorities which had or had not ratified the earlier agreement would be needed—and these could be referred to in the document and kept up to date by officials from both sides.

Lecturers at North Staffordshire Polytechnic have called off the half-day strike planned for yesterday when plans for up to 42 redundancies were withdrawn by polytechnic governors and the education authority.

Talks begin on CLEA proposals

by John O'Leary

A group of civil servants and local authority representatives have begun discussions which could lead to fundamental changes in the running of colleges and polytechnics.

Dr Rhodes Boyson, under-secretary for higher education, has set up the consultative group to make recommendations on the need for changes in instruments and articles of government following representations from the Council of Local Education Authorities.

A CLEA paper on the subject caused uproar earlier in the year when it claimed that some polytechnic directors had sanctioned "luxury spending" and had a life-style more lavish than most university vice-chancellors.

It called for reserve powers for local authorities to allow them to intervene in the detailed financial administration of their institutions where there was evidence of maladministration and to assume direct powers in the approval of courses, rather than simply determining "general educational character".

Other moves were advocated to permit budget changes in mid-year and to make authorities the legally undisputed employers of college and polytechnic staff, giving them responsibility for discipline, health and safety, redeployment and redundancy. College constitutions, now the responsibility of the Department of Education and Science, would also be brought under the authorities' control.

CLEA told Dr Boyson that local authorities did not want to take over day-to-day running of their institutions but that existing articles of government stood in the way of effective management in higher education.

A preliminary meeting of the consultative group, held last week, discussed CLEA's proposals, but is unlikely to reach any conclusions this year. It will decide whether any changes are required before setting out the format for the rest of the inquiry.

Dr Boyson has already sounded out college principals and polytechnic directors on the subject and promised to consult them further if new instruments and articles are proposed. They have declared their opposition to CLEA's plans and are likely to have the support of the Society of Education Officers, whose members are understood to be generally satisfied with their current powers.

A Committee of Directors of Polytechnics official said this week: "We are not enthusiastic about changes *per se* and would be very anxious indeed if there were substantial changes along the lines CLEA suggests. We are going to make a further submission to Dr Boyson and we would expect to be involved in any more detailed consultations."

OU to negotiate for new funding of enterprises

The Open University is to negotiate with the Department of Education and Science for a new method of funding its world-wide marketing organization and publishing company.

The university senate decided this week that this is essential if Open University Educational Enterprises Ltd is to keep going. The decision follows recommendations made by a review group set up by the council to look into the company's operation and future.

The company, which has an annual turnover of about £1m, sells OU course materials—books, films and tapes—both at home and in 80 countries overseas.

Last year it suffered a disastrous 62 per cent drop in net profits from £161,000 in 1978 to £60,000. However, the company's longer term position has been strengthened by the winning of a contract to distribute the entire output of the Central Statistical Office which will add £400,000 to the annual turnover and £89,000 to its net profits.

A crucial aspect of the renegotiation is the university's desire to end OUEE's present requirement to hand over all its taxable profits to the university. This deprives the company of working capital which could be used to offset the effects of inflation or undertake new developments.

The senate meeting also approved a council proposal to readvertise for a new secretary following a three month constitutional dispute.

Lord Perry: outgoing vice-chancellor.

The job was offered to Mr S. R. Bosworth, registrar of Salford University only weeks after Professor John Horlock—also from Salford University—was appointed vice-chancellor of the OU. The appointment was blocked by the senate on the grounds of inadequate consultation.

The senate meeting further decided to act on certain changes in the structure and function of the OU proposed by the outgoing vice-chancellor Lord Perry.

Part-time pay dispute settled

The Burnham further education committee has agreed on a way to settle the longstanding dispute on part-time lecturers' pay without resorting to arbitration.

The deal gives the union side much of what it has sought since the Clegg Commission recommended that part-timers should be paid pro-rata with full time lecturers. But it is phased in such a way that education authorities will be able to count the cost and if necessary trim the educational provision to meet it.

From January 1 1981 part-timers with more than 20 hours' class contact will become full time staff with the consequent improvements in conditions of service.

From September 1981, those with 60 per cent of the full time hours will qualify for associate lecturer status, giving them the appropriate fraction of full time pay and conditions.

The question of staff working in a number of establishments is to be considered by a Burnham working party, but an official from the employers' side warned: "Only a limited number of other cases might be brought in."

But the package includes an increase in the part-time rates to what the management at any rate regards as the equivalent of pro-rata at a cost of £8 million. The deal is felt likely to be ratified by the executive of the National Association of Teachers in Further and Higher Education when it meets on October 31.

Jailed professor seeks retirement

by Olga Wojtas
Scottish Correspondent

Glasgow university court will next week consider an application for retirement on the grounds of ill health from the head of its psychology department convicted two months ago of throwing a Molotov cocktail at a boutique window.

In view of the application from Professor Derick Corcoran, the court has suspended a committee before which the professor was to have answered a charge of conduct incompatible with holding office in the university.

If Professor Corcoran's application is successful, he will be able to retire on a pension.

The professor has just lost his appeal against an 18 month prison sentence, after admitting a charge of attempted wilful fireraising by trying to throw a lighted bottle of petrol into a boutique from which his teenage son had been dismissed.

At the appeal, Professor Corcoran's counsel said the sentence was excessive. Psychiatric reports stated the professor was suffering from emotional strain, and his judgment had been seriously impaired as he had taken drink and drugs before the incident.

The professor was now receiving treatment in a psychiatric hospital, said his counsel, and was contrite about the offence.

The university court heard that 23 messages of sympathy and support for Professor Corcoran had already been received from psychology professors and other people eminent in the field, and that more than 50 of his friends and neighbours had sent a petition asking that he be treated sympathetically. Other members of Glasgow's Association of University Teachers have made similar representations to the principal.

1979 overseas figures fall

The numbers of overseas students entering universities fell in 1979 for the first time in many years, after doubling in less than ten years, according to statistics released this week by the Department of Education and Science.

There was a five per cent fall in new overseas university students last year, with undergraduates showing the most marked decrease. But between 1969 and 1979 the overseas student total more than doubled while the number of home students increased by 26 per cent. The figures show that the overseas shares of the undergraduate and postgraduate populations have risen from 4 per cent to 7 per cent, and from 25 per cent to 36 per cent respectively.

The last ten years has also seen a huge increase in female students compared with men, a rise of 70 per cent for female undergraduates from Britain to 14 per cent of men.

As a percentage of the total number of undergraduates, numbers of women has gone from 30 to 39 per cent in the last ten years, and from 24 to 35 per cent for postgraduates.

New moves in closed shop row

Leeds Polytechnic director Dr Patrick Nuttgens is backing moves to force a fresh test of opinion on the post-entry closed shop agreement between the city council and the National Association of Teachers in Further and Higher Education.

Although he failed to persuade his academic board to seek a ballot in the polytechnic, he said this week: "I would support any move anyone feels like making". Dr Nuttgens is a Natfhe member.

Under the agreement all new recruits at the polytechnic and the city's colleges must either be Natfhe members or agree to join.

Fresh impetus to the row has been given by complaints that one of the polytechnic's two Natfhe branches was unable to ballot its members through lack of time.

● National and Local Government Officers Association is still "blacking" the work of five unfilled administrative posts at Leeds.

Polys fear Land Bill clauses

Polytechnic directors are expressing concern at Government plans which could make it considerably harder to raise funds for building projects from next year.

The Local Government Planning and Land (2) Bill, now in committee stage in the House of Lords, contains clauses which will mean polytechnics will have to negotiate with local authorities to finance capital expenditure.

At present polytechnics can apply for special "starts" allocations direct from central funds for projects costing more than £10,000, with local or national significance.

If the new clauses are agreed, all future capital expenditure will go annually direct to local authorities. The amount, which will not cover items less than £5,000, will be based on estimates of committed and planned expenditure.

Policies unveiled for mid-career refresher courses

by Charlotte Barry

New Government policies to advance more mid-career refresher courses in higher and further education institutions were unveiled this week by the Department of Education and Science.

A new discussion document, *Continuing Education: Post-Experience Vocational Provision for Those in Employment* proposes action in three key areas. The department intends to:

● remove the financial and administrative obstacles in mounting short, part-time courses.

● provide ... innovatory ... teaching methods and course planning approaches.

● promote machinery to co-ordinate local, regional and national demand for courses and the development of an information network.

The DES further proposes to follow up the Toyne Report and consider introducing a pilot scheme for the development of a national information service on educational transfer.

It will also seek cooperation from research and training bodies in assessing the extent and nature of demand for post-experience work and ask the Advisory Committee on the Supply and Education of Teachers to draw up proposals for in-service training of lecturers on these courses.

The department intends employers to meet the full costs involved. It will emphasize the important part they have to play by promoting the value of post-experience work through the Confederation of British Industry and the Trades Union Congress.

The 15-page document, which arose from a report produced by the Model E Reconnaissance Study Group set up in 1978 in the aftermath of the Labour Government's discussion paper *Higher Education into the 1990s*, emphasizes the importance of mid-career vocational courses in the face of rapid world and technological change.

"We must develop the qualifications and skills needed in the country's workforce if managers and employees at all levels are to be able to meet successfully the complex challenges facing them and to promote economic growth", it says, acknowledging that much is already being done.

"There are many bodies and individuals engaged in identifying needs and in making provision. As post-experience work grows in importance, it should become, particularly in view of demographic trends, an integral—even central—part of such activities to be promoted vigorously."

NEXT WEEK

Owen Chadwick on the secular movement
Michael Posner on SSRC funding
Research at Kew
What happened to Model E
Behind the scenes at Huddersfield
New books in biological science

THE TIMES
Higher Education
SUPPLEMENT
October 24, 1980 No 416 Price 35p

Student enrolments increase as financial growth is stunted

by Ngaio Crequer
and Paul Flather

Student numbers in higher education are continuing to grow despite the Government's policy of "level funding" and fears that new spending cuts are being considered by the Cabinet. Universities and polytechnics which have expanded first-year recruitment this year will be forced to teach more students with less money.

Provisional figures released by the Committee of Vice-Chancellors and Principals this week report that there will be 78,939 home undergraduates accepted this year compared with 76,631 in 1979. Overseas undergraduate numbers are expected to remain almost exactly the same as last year—5,756 compared with 5,767.

Polytechnics, too, expect a big increase in enrolments. The Committee of Directors of Polytechnics says that home undergraduate numbers will increase this year by about 5 per cent.

The growth in student numbers is entirely out of step with the Government's plans for higher education spending. Vice-chancellors fear that by taking in more students without any financial growth they will be depressing the "unit of resource" and damaging the quality of teaching.

Similar fears were expressed last year when the University Grants Committee advised universities to reduce their first-year intakes by 6 per cent in order to keep overall numbers constant. The advice was subsequently withdrawn, but the policy of level funding has remained.

Many universities say they have been unable to resist the pressures of an increasing number of well-qualified candidates wanting places. Lancaster University reports the biggest undergraduate admission in its history, with 27 out of 38 departments exceeding their agreed quotas.

Dr Raymond Rickett

At the University of Manchester Institute of Science and Technology new undergraduate enrolments are up by 13 per cent overall—including a 24 per cent increase in home students and a 37 per cent drop in overseas entrants.

Polytechnic directors, meanwhile, are angrily challenging Government assumptions that falling student numbers in the public sector could justify a reduction of 2 or 3 per cent in the Advanced Further Education (AFE) pool, which finances advanced work in polytechnics and colleges.

Dr Raymond Rickett, chairman of the CDP, said: "Nothing in the recent past or from soundings of present trends would justify cutting the AFE pool. Any attempt to cut the pool would be based on an erroneous interpretation of the statistics on enrolments."

Dr George Tolley, rector of Sheffield Polytechnic, said much of the increase in polytechnic numbers had come in important vocational areas, particularly in science and engineering.

Figures for the colleges and institutes of higher education will not be finalized for another month, since many have not yet closed recruitment to their courses. Early indications are that, despite the dramatic fall in teacher training, the overall picture will be similar to last year.

The Central Register and Clearing House, which handles the majority of college courses, reports increased application for the new diversified courses but confirms a slump on Bachelor of Education courses. The two trends are expected to cancel each other out.

The pattern of growth on both sides of the binary division is in line with Government forecasts on student numbers published two years ago, but last year's Expenditure White Paper departed from tradition and made no forecast of student numbers. In the DES, long-range planning for numbers appears to have stopped because of the uncertainties about Cabinet spending plans.

Now that many institutions appear to have expanded intakes despite the official policy of "level funding", the roll-on effect on later years is bound to result in a substantial drop in spending per student.

EEC duty could hit scientists

by Robin McKie
Science Correspondent

University science departments are facing a serious new threat, this time over the interpretation of EEC import duty regulations.

The problem affects scientists wishing to use commercial scientific instruments for basic research. In cases where they were previously granted exemption from import duty on overseas-built machines, they are now finding they can no longer recoup these taxes—which can add up to 25 per cent to costs.

The increase is being taken very seriously by universities as their financial ability to replace outdated machines is already strained. Last week, the Heads of Chemistry Departments conference in London agreed to contact Common Market colleagues to investigate interpretation of EEC guidelines in other countries.

British academics believe the Department of Trade officials are being over-zealous in implementing the Common Market regulations. In previous cases where a department needed a new machine that could not be supplied by manufacturers in Common Market countries, import duty was formally waived if the instrument was to be used "in scientific research or the advancement of knowledge".

New EEC regulations changing this state of affairs are now being rigorously imposed by Department of Trade officials. These state that instruments built for commercial purposes, but used for basic scientific work, will no longer be exempt.

For instance, one university that wished to purchase a Canadian high-speed pulse generator for fundamental research in low density plasmas was told it could not receive duty exemption as the machine "had not been developed primarily for scientific research".

In a paper which was presented to chemistry heads conference, Mr C. L. Henderson of Bath University said these decisions had "caused amazement among scientific colleagues" and had resulted in protests being made to the Department of Trade.

He proposed a campaign that would include putting political pressure on high levels of the Department of Trade; sponsoring parliamentary questions; approaching local members of the European Parliament; and ultimately applying for a judicial review in the Queen's Bench Division of the High Court.

Contents

Colonial legacy

Israeli claims confirmed

Inquiries by *The THES* have confirmed allegations that Exeter University had political reasons for barring six Israeli academics from a recent symposium on Saudi Arabia. The vice-chancellor, Dr Harry Kay, had earlier denied the charges.

The symposium was organized by the university's Centre for Arab Gulf Studies, which is partially funded by Arab states. The Israelis who expressed interest were advised not to attend.

In an angry exchange of letters with Lord Janner, president of the Zionist Federation of Great Britain, Dr Kay denied that there had been any political reasons for excluding the Israelis.

But documents obtained by *The THES* show that fear of antagonizing the Arab participants was the real reason for the exclusion of the Israelis. The symposium organizers believed the presence of Israelis would inhibit free discussion and jeopardize the centre's links with the Gulf.

The documents do not, however, bear out suggestions that the decision to keep out Israeli academics was linked with the financial aid the university receives from Arab countries. The Kingdom of Dubai recently donated £750,000 for a library.

A letter last month from Lord Janner had expressed "deep concern" about the exclusion of the Israelis.

In his reply Dr Kay said that three times as many participants wanted to attend the symposium as could be accommodated.

Leader, page 31

A shaggy dog story

It will be anything but a dog's life at Stirling University for Pug, a brown and white mongrel belonging to new principal Sir Kenneth Alexander, writes Olga Wojtas.

Sir Kenneth, who is in the process of moving into the principal's house, refuses to be parted from his pet despite Stirling's rule that no dogs, apart from guide dogs, are allowed on campus.

So there are strong rumours that Pug will therefore be officially reclassified as a cat.

However, Mr Arthur Steward the university's safety and security officer, implied that Pug's transmogrification would be a final measure. "I don't know whether it's a dog or a bitch. If it's a bitch, then of course the rule, which refers to dogs, won't apply," he said.

He added that the principal's house was well away from the rest of the campus.

NUS threatens to call in ombudsman on funds

The National Union of Students has threatened to call in the Parliamentary ombudsman if administrative wrangles surrounding new rules on student union financing are not solved.

The NUS met Dr Rhodes Boyson, the secretary of state for higher education, earlier this week in a desperate attempt to thrash out details of the new rules which it feels could undermine the autonomy of the country's 750 student unions in future years.

The students are pressing for guidelines to safeguard the independent financing and political autonomy of student unions. They are urging a one-year postponement before the new rules are implemented and have threatened to call in the ombudsman if Department of Education officials do not clarify the position.

Under the new rules announced by the Government last February, student unions will have to negotiate for funds within their own institution, competing with all the other financial claims on a college or university budget allocation.

Mr David Aaronovitch, NUS president, said: "We remain extremely unhappy not just with the new proposals but with the way the whole matter is being handled. The DES seems to want to get rid of the matter as quickly as possible by showering all the real problems on other groups including NUS."

The union is having meetings with the Council of Local Education Authorities and with DES statisticians to try and resolve outstanding difficulties. One item is the way the interim grant of £32 per student to be added this year to college block grants, has been calculated. NUS says the figure is a very low average of the current capitation fee.

At Brighton Polytechnic students said this week they were already experiencing a foretaste of the difficulties which the new rules could bring. They have accused the polytechnic of interfering with the student union's autonomy by freezing its income of £136,000.

A row over the legality of the student union's constitution has been simmering for a number of years at Brighton, and last year after a number of occupations the union was taken to court and found to be acting unconstitutionally.

Although the polytechnic released the union's income last year, Mr Geoffrey Hall, the polytechnic director, decided to freeze funds to force the union to amend the constitution.

continued on back page

Sep III Co 1:6

Directors attack social guidelines

by Charlotte Barry

Directors of social work courses in universities and polytechnics in the Midlands have attacked new guidelines proposed by the Central Council for Education and Training in Social Work.

In a letter to Miss Priscilla Young, director of the council, they accuse the council of "slipshod thinking" in its revised attitudes to the certificate of qualification in social work.

"In our view, CQSW courses should continue to offer a professional education for students, and should not be required as the CCETSW document implies to provide a predominantly technical training based on a static view of social work and social work education", it says.

Members of the group include Professor Martin Herbert of Leicester University, Professor Rolf Olsen of Birmingham University, Dr Bernard Davies of Warwick University and eight other heads of courses. Their reaction is at direct odds to social work practitioners who have welcomed the proposed shift in emphasis from course content to assessment.

The Midlands group accuse the council of proposing new guidelines that will lead to a significant narrowing of the syllabus, encourage a "bland and superficial" educational experience for students and prevent both study in depth and any specialized practice.

"This in turn will mean a reduction in innovation and diversity in CQSW courses and therefore in lowering of standards in both practice and education", the letter says.

It will also create serious problems in maintaining the balance between the requirements of both the council and institutions, it maintains.

Another major allegation in the letter is that the proposed guidelines give too little attention to the student's need to criticize social work theory and practice.

It calls on the council to take full account of the objections to the guidelines being presented by others in social work education.

"The purpose of this consultation should not be simply to seek comment on the present draft document, but to promote a radical examination of existing and future course review procedures," it says.

Leeds will defy UGC over subsidy for nursery

Leeds University is to defy University Grants Committee guidelines and subsidize the student union nursery.

Both university council and senate have approved a plan to pay the salaries of the matron and assistant matron at the nursery, at an annual cost of approximately £13,000.

The decision means a reprieve for the nursery, which caters for 60 children. It had a deficit of £30,000 last year and faced certain closure without university intervention.

At the beginning of the year the UGC told universities that in no circumstances should the recurrent costs of a creche involve a charge on general income. In July they slightly relaxed their position by saying that landlords' repairs to nursery buildings, provided they were part of the permanent stock of university premises, were permissible, as was assistance in cases of student financial hardship.

A spokesman for the university said this week that question of university support for the nursery had been fully considered by all the appropriate committees. The university support for the nursery on the principle of support although the mechanism of internal funding had yet to be decided.

There is good news for another nursery which has also been under threat of permanent closure. The day nursery at Manchester, which serves the university, the Institute of science and technology and the polytechnic, may be moved to new premises.

Manchester City Council has approved, in principle, a plan to house the nursery in two disused classrooms at a local infants' school. The financial arrangements have still to be worked out but it is hoped that the new site will be available for use, after alteration, by the spring.

There will be places for about 40 children at the new nursery. The present one serves 30 children.

Inauguration day for SRC's Starlink

by Robin McKie

A major £1.8m computer system, which will link six astronomical centres in Britain, is to be inaugurated today at the Science Research Council's Rutherford and Appleton laboratories. The network, known as Starlink, will provide astronomers with advanced image processing facilities which can be used at any of the six centres.

The system is the most advanced of its kind in the world, claimed the director of the Royal Observatory, Edinburgh, Dr Malcolm Longair, who added that it would be "absolutely crucial to the whole future of optical astronomy in Britain". In particular, Starlink will form the basis of the SRC's bid to accommodate the European data centre for the Space Telescope, the giant satellite observatory to be launched by America and Europe.

The telescope, which will allow scientists to probe 10 times further into space than at present, will completely revolutionise optical and ultra-violet astronomy, added Dr Longair. A European centre will be needed to co-ordinate data analysis and the SRC hopes its unique computer system will persuade the European Space Agency to set this up at the Royal Observatory, Edinburgh, which is already responsible for running British telescopes in Australia and Hawaii.

European astronomers using Space Telescope data will be able to use the common computer programmes of Starlink to analyse their data at any of the six centres. These are located at the universities of Manchester and Cambridge; at University College, London; and at the SRC's own centres at the Rutherford and Appleton laboratories, the Royal Greenwich Observatory and the Royal Observatory, Edinburgh.

Dr Longair added that over the past ten years, astronomers had moved away from taking direct optical and photographic images of stars, and instead used digital processing of information. Photon counts were made of light coming from stars and using the Starlink system, astronomers could quickly obtain information about colour, intensity, spectrum and many other features of stellar objects which had previously taken several days to calculate.

Students from Imperial College experienced at first hand the rigours of an open top 1925 bus when they travelled to Oxford for a lecture by Sir Alex Jarratt, chairman of Reed International.

The journey was organized by the Industrial Society, which sets out to give students a better knowledge of all levels of industry. It was the first of a series of links between industrial societies at individual universities. Later the bus was due to take students from the newly formed Surrey University industrial society on a visit to a Guildford factory.

Natfhe argues for policy U-turn

A reduction in public spending and the economic role of the state will neither release resources for the private sector nor promote a spirit of competitiveness and enterprise, according to the polytechnic and college lecturers' union.

In a major policy statement which embodies a wide-ranging critique of the Government's economic policies, the National Association of Teachers in Further and Higher Education says: "The public sector has a vital role in the economy in stimulating private manufacturing and service sectors and not, as many critics allege, in stifling them".

Calling for a policy of planning and coordination rather than arbitrary cuts and sudden policy reversals, Natfhe suggests the Government should instead use and develop the public sector.

The cornerstone of a new and positive economic strategy must be full employment associated with new concepts of reduced working hours, longer holidays, and greater opportunities for personal and vocational development, it argues.

There is a need for new democratically-structured planning bodies, especially a Manpower, Training and Further Education Commission.

Further and higher education has already suffered severely from cuts and is further under threat, Natfhe says. But further and higher education was a prime example of a service which stimulated the public sector.

It provided essential vocational and professional training and retraining (which the private sector had consistently failed to do) and courses to help the disadvantaged, such as the young unemployed, achieve economic and social independence rather than remain a continuing charge on the state.

"There is little evidence that investment in the private sector has been 'crowded out' by the demands of the public sector," Natfhe argues. Any suggestion that manufacturing and exporting industry was being hampered was "simply not borne out by the facts".

The level of the spending was not out of line with other advanced industrial countries, whose economies did not appear to have suffered.

Businessmen and councillors of all political parties were already expressing misgivings about the level and nature of the cuts, Natfhe says.

"Democratic societies with mixed economies are complex organisms in which the role of the state in the provision of goods and services and the direction of policy are crucial."

Leader, page 31

Colleges saved by 'self-financing' deals

Two more short-term residential colleges for adults have been saved from closure by a deal which will force them to be self-financing.

Pendrell Hall and Wedgwood Memorial College in Staffordshire were both on a list of suggested closures drawn up by the county council's budget panel which also recommended axing courses at Burton School of Arts and Crafts, Burton School of Speech and Drama and Lichfield School of Art. These were part of a £10m or 5 per cent cut being sought in the 1980-81 education budget.

Wedgwood, one of the oldest of short-term colleges, is sponsored jointly by the county council and contributions from Keele University department of adult education and North Staffs district of the Workers' Educational Association. Fee income accounts for £36,000 of its annual budget of £100,000.

The news of the reprieve has been received with reservations by its warden, Dr Derek Tatton, who will have to impose massive fee increases on students, including the retired, over the next year.

"I am against any move to self-financing," he said. "I am now not changing the balance of the programme here. Unless we can find some way of subsidizing certain adult education courses we will find it difficult to get people to come to them."

Pendrell Hall, which will be expected to become self-financing within a shorter period, already recovers about 80 per cent of its £120,000 yearly expenditure from fee income, from courses run for local industry.

In the past year six out of the 40 short-term colleges have been forced to close as a result of local authority cuts. Further closures are being opposed by the Standing Conference of Principals in Short-Term Colleges, which sees the college as a national asset, in a pamphlet issued this week.

"This national asset, helping the people, the industry and the services of the whole country, is being rapidly eroded by local decisions focused on very small amounts of money," it says.

Survey shows greater chance of employment for new teachers

by Patricia Santinelli

More new teachers not trained in universities obtained teaching posts or promises of ones in 1979 than in the previous two years, a Department of Education and Science survey shows this week.

The survey based on returns submitted for 21,800 students (96 per cent) of the estimated total output from non-universities shows that 16,600 (74 per cent) obtained posts or a firm promise of one as opposed to 67 and 54 per cent in 1978 and 1977 respectively.

The survey also shows that the gap in obtaining employment between those holding Postgraduate Certificate of Education and those who have Bachelor of Education degrees decreased considerably in the years 1977-79. In 1979 each sector amounted to 76 and 75 per cent respectively, compared to 74 and 71 per cent in 1978 and 68 and 63 per cent in 1977.

However, leavers from all three types of courses including those holding Certificates of Education did not match the success rate of university departments of education PGCE trained teachers, 80 per cent of whom obtained employment, as [illegible]

[illegible] per cent in comparison to university PGCE trained leavers.

Some 30 per cent of the unemployed teachers had trained for secondary level and 70 per cent for lower levels compared with 22 per cent and 78 per cent in 1977. The rise in unemployment at secondary level is partly accounted for by an increase in unemployment among Cert Ed leavers from 17 to 23 per cent, and the greater number specializing in PGCE at secondary level.

The largest block of unemployed in the secondary/further education sector were English specialists (91) followed by history (78) and physical education (65). No other subjects had more than 50 and sciences as a group had 23.

However, the survey shows that the total number of secondary further education specialists reported as unemployed fell by [illegible] per cent between 1977 and 1978 and this was even higher for specialists in art, home economics and physical education, with a recorded fall of more than over [illegible] per cent.

In a further breakdown of figures the survey shows that unemployed history and English specialists together accounted for half the PGCE total, one third of the [illegible] honours and one quarter of the [illegible] ordinary and only one fifth of the Cert Ed. [illegible]

The proportion of leavers [illegible] the main non-teaching jobs [illegible] took 10 per cent of the output [illegible] was broadly similar to figures for 1977 and 1978. (Employment of New Teachers, Statistical Bulletin 14/80, DES)

Medical merger opposed

by Robin McKie
Science Correspondent

Plans to close down and merge some of London's medical schools will be opposed by university lecturers, it was revealed this week. The warning came from the Association of University Teachers following last week's decision by the joint planning committee of London University to end pre-clinical teaching at King's College and move Westminster Medical School to the Charing Cross School site.

"If the university goes ahead with these recommendations we will oppose them", warned John Akker, deputy general secretary of the AUT. "We can see no justification, for example, for the closure of the pre-clinical department at King's either on financial or academic grounds".

The joint planning committee also agreed that some of the smaller London postgraduate institutes should be merged, although it recommended that the pre-clinical school at the Royal Free hospital be saved. This, and the other closures, were originally proposed in the report of Lord Flowers' working party on London medical education. Students at the Royal Free this week said they were "naturally elated" by the decision to save the department.

The package of proposals accepted last week by the joint planning committee, the senior policy-making group of the university senate, had originally been rejected by them following their recommendation by the joint medical advisory committee. It was asked to reconsider the plan and a list of alternative possible moves were requested.

When these were put to the JPC last week, it agreed to the original proposals that Westminster be merged with the Charing Cross and that King's College should lose its pre-clinical school.

However, both London University senate and court have still to decide on the committee's proposals and these are likely to be vociferously opposed when they are considered by the senate on October 29 and by the Court on the following Wednesday.

Schools' industry debate ignores 18-plus power

by John O'Leary

Higher education was all but forgotten in the first of the Government's regional conferences on schools' links with industry. Only two of the 80 participants represented post school provision and little attention was paid to the influence of the sector on secondary education.

Although examinations were allotted one third of the day's timetable, the universities, with their powerful voice in the examination boards, were not invited. Only Mr Geoffrey Holroyde, director of Coventry/Lanchester Polytechnic, and Mr H. C. Cleever, principal of Wulfrun College of Further Education, Wolverhampton, were present this week at the Council House, Birmingham.

Mr Mark Carlisle, Secretary of State for Education, who opened this first of a series of 10 conferences, accepted the relevance of further and higher education to the discussions. But, he said, invitations had been left to local authorities and there were delegates present with experience of higher education.

The invitation list had already caused controversy when the Trades Union Congress Education Committee had objected to the absence of representatives from the National Union of Teachers and called for a boycott of the conference.

Mr Carlisle said he deplored the union's action and that delegates had been invited on the basis of who would make the best contribution.

In fact, much of the debate was reminiscent of the Labour Government's Great Debate, with industrialists and head teachers sparring over each other's attitudes to education.

Teacher training naturally loomed large in the proceedings, despite the almost total absence of those involved in the area. A paper produced by the Department of Education and Science hinted at the possibility of higher grants to attract more students to teaching in subjects suffering manpower shortages. Although applications to the post graduate courses were up, those for BEd courses remained depressed, the paper said, adding: "DES is examining ways of making training for shortage subjects more attractive."

The suggestion struck a chord with councillor D. Lightbown, chairman of the Staffordshire education authority, who said there was too much choice in higher education and this had led to the shortages. He would favour variable grants, possibly combined with a move towards loans for subjects in other areas.

The Chief Education Officer for Warwickshire, Mr M. L. Ridger, however, put the blame for this and other ills on examinations and, in some cases, on the universities. Examinations were dominating and distorting the school curriculum, he said, making it impossible to carry out industrialists' advice. In craft, design and technology, for example, the universities were a direct cause of the shortage of teachers because of their refusal to accept A levels in the subject.

Pressure mounts on MSC to alter training scheme

by Patricia Santinelli

Mounting pressure on the Government and Manpower Services Commission to alter the whole scheme of education and training for young people in the light of rising youth unemployment came from the Association of Metropolitan Authorities and the National Youth Bureau this week.

The Government is currently considering proposals put forward by the MSC to revamp and expand the Youth Opportunities Programme into a national education and training scheme, but no decision is expected until later this month.

Both the AMA and the NYB in two completely separate proposals have made a bid for a scheme which would give local initiatives a greater role.

The AMA has appealed to the MSC to give local government a more central role in devising and delivering special programmes in recognition of the major part local authorities play in the education of young people but also in view of their position as the biggest and most experienced employers in the country.

Speaking about the proposals, Councillor Jack Smart, chairman of the AMA, described the prospects for young people as appalling, and pointed out that in recent months several metropolitan authorities, including his own at Wakefield, had launched special schemes to help young people by offering them jobs and in other cases linking part-time work with continuing education.

The Association said that local authorities through their planning and industrial relations departments could in cooperation with the MSC do much more given the resources to introduce more local manpower and training policies relevant to their areas and regions.

The Equal Opportunities Commission has accused the Manpower Services Commission of failing to increase training opportunities for women.

In its submission to the MSC's review of the Employment and Training Act the EOC says that women returning to work with little original training or outdated skills have not been catered for.

"The EOC believes it is inconsistent for the MSC review body to emphasize the important role which these women will play while at the same time omitting the training of women from its priority list for possible supplementary expenditure", it says.

London school warns against part-time study

Birkbeck College has warned that claims made by other University of London schools for the development of part-time courses should be carefully tested.

In its submission to the Swinnerton-Dyer committee on academic organization at London University the college states: "We do not believe that part-time courses can be mounted satisfactorily in multi-faculty schools whose first responsibility is for full-time education; academic excellence suffers and economic effectiveness is lost."

It says the teaching load involved in evening courses must weigh heavily on staff teaching full-time by day and in such circumstances it was almost impossible for part-timers to escape the stigma of "second-class citizens". Further, where part-time courses were subordinate to full-time ones, their length would increase and staff research commitment would suffer.

It recognizes a growth of interest in the provision of part-time education but says the UGC's identification of Birkbeck as the centre on which this growth should be focused should be recognized.

"The expansion of part-time courses within the university is haphazard: this leads to a waste of resources and a threat to academic standards." It urges proper coordination of planning and the examination of new courses in relation to what is on offer at Birkbeck or could be given extra resources.

The submission states that Birkbeck has given a *high priority* to the development of taught master's courses. It recognizes that there will be competition from others in mounting part-time advanced courses.

Such courses must be fully responsive to change in demands and Birkbeck was well placed to adapt to circumstances. ". . . machinery should exist at university level for testing new proposals for part-time courses to ensure (they) are not duplicated or treated as makeweight adjuncts to teaching directed primarily towards full-time students."

Poly directors step up fight against ratepayer control

Polytechnic directors are now considering new evidence to back their case against strong financial control over their budgets by local education authorities.

An internal briefing paper prepared by the Committee of Directors of Polytechnics shows that on average ratepayers contributed less than 3.5 per cent of the total annual budget of their local polytechnic.

The paper has been prepared as yet another weapon in favour of the CDP's long-standing demands for the establishment of a national funding agency, equivalent to the University Grants Committee, to look after public sector colleges.

The statistics show that the contributions of ratepayers of the controlling l.e.a.s range from 0.6 per cent to Kingston, up to 8.6 per cent to North Staffordshire polytechnic. The average contribution was 3.4 per cent, and only five polytechnics received more than 4 per cent of their funds from local rates.

"This seems a somewhat slender base for the exercise of total financial control. Accountability would appear to need to be addressed elsewhere," the paper says.

It concludes that each authority is in fact simply contributing some rate borne money to pay for the education of its own sons and daughters. Local education authorities were not funding institutions, because its pooling contributions would continue even if its polytechnic closed down.

The CDP argument, laid out in the paper, was swiftly attacked by the Council for Local Education Authorities. Mrs Nicky Harrison, vice-chairman of CLEA, said the paper was "tendentious" and "crazy". "This argument could be extended to cover every local service and say for example housing should not come under local authority control, but under a national funding body," she said. "It also misses the point about why polytechnics were first set up. They were to work within the community and to provide services for local people."

The CDP figures are calculated from published material. They are based on three components: 100 per cent by rate payers for non-advanced and further education (NAFE) enrolments, 10 per cent support for tuition fees for AFE enrolments, and a percentage of the non-rate support grant (RSG) element paid to the AFE pool.

Other approximations covering discretionary grants, overseas students and self-funded students are thought to cancel each other out. The full table is listed below, with controlling l.e.a.s. in brackets where different from the name of the polytechnic.

POLYTECHNIC	RATEPAYERS CONTRIBUTION TO 1978/79 BUDGET (%)
North Staffs (Staffs)	8.6
Birmingham	5.8
Preston (Lancs)	5.7
Leeds	4.4
Leicester (Leics)	4.4
Bristol (Avon)	4.0
Teesside (Cleveland)	3.8
Trent (Notts)	3.8
Southbank, Central London, North London, City (ILEA)	3.4
Thames	3.1
Wales (Mid-Glamorgan)	2.7
Huddersfield (Kirklees)	2.7
Plymouth (Devon)	2.4
Brighton (East Sussex)	2.3
Portsmouth (Hants)	2.3
Liverpool	2.1
Manchester	[illegible]
Hatfield (Herts)	[illegible]
Sheffield	[illegible]
Wolverhampton	[illegible]
Middlesex	[illegible]
Coventry	[illegible]
Newcastle	[illegible]
Sunderland	[illegible]
Oxford	[illegible]
NELP	[illegible]
Kingston	0.6

Thames governors vote for transfer

Governors of Thames Polytechnic have voted overwhelmingly to transfer the school of architecture from the main Woolwich site to the Dartford outpost.

A two-hour debate culminated in a vote of 18 for the move with five against, and two abstentions.

"The court is confident that with the support of the Inner London Education Authority the means can be found to ensure that the school will enjoy conditions and services no less favourable than it currently enjoys—and will have access to residential and social facilities in many respects superior to those at Woolwich," a polytechnic spokesman said.

The object of the move—only three years after the school was transferred from Hammersmith at a cost of £250,000—is to create elbow room at Woolwich and make better use of the underused Dartford site.

The governors expressed their regret at a dislocation which the enforced move would cause for both staff and students, and said they were acutely conscious of the inconvenience for part-time professional students.

Basic research is the key to recovery, says Lord Flowers

By Ngaio Crequer

A full reappraisal of the support of basic research in the universities of industrialised countries is urgently needed if they are not to sink into mediocrity, Lord Flowers, Rector of Imperial College, said yesterday.

Speaking at Imperial's annual Commemoration Day ceremony at the Royal Albert Hall, he said the reappraisal had to be made for research to remain effective, teaching lively and universities to make the proper contribution to the economic recovery.

"The system whereby research is supported in the universities is under great strain, not only in this country but in all other countries of Western Europe and in the United States", he said.

"Permanent university posts are becoming scarce; students understandably prefer stability of employment elsewhere to an uncertain academic future. Already university teachers are an aging population, an immobile population, unwilling to take risks with their jobs." He said that without the young, national research potential was emasculated and lacked leadership for the future.

Further, the breakdown of the dual support system of research funding meant that the grant to Imperial was not sufficient to cover all the overheads associated with research.

"When allowance is made for increased salaries, for the rising costs of scientific equipment, for the maintenance of premises, what at first appears to preserve the status quo is in fact supporting less and less . . . it is becoming difficult to obtain research grants for even high quality projects."

Lord Flowers said that Imperial had budgeted for a loss of a quarter of overseas numbers this October and this is what had happened.

'Lack of trust' at Glasgow College

by Olga Wojtas
Scottish Correspondent

Glasgow College of Technology is at present characterized by low morale and lack of trust in the decision-making process, a shortage of resources, and lack of high-level student representation, according to the newly released report of the Council for National Academic Awards.

The CNAA has postponed its decision on continued recognition of college courses until it visits the college again next autumn, and sees what progress the college has made.

During its quinquennial visit in March, the council was lobbied by staff alleging the college was run in an authoritarian and undemocratic way. The council also received a statement of dissatisfaction from elected members of the college's academic board.

In its report, the CNAA says that although the college is recognized by the Scottish education department as a higher education institution, its new constitution after regionalization in 1975 corresponded to that of a further education college, giving the director a closer formal relationship with the region's director of education.

The director, Dr Reginald Beale, interpreted this as placing on himself the onus for making major decisions, says the report, and this had resulted in a marked tendency to strengthen the executive function of the directorate, with a corresponding reluctance to develop the college's academic structure.

The root of the problems faced by the college lay in a conflict of expectations over the form of internal government appropriate to a college of higher education, says the report. The recent and rapid expansion of the college had seen an infusion of young staff who wanted to participate effectively in the decision-making process, but often felt unable to do so, confronted by a situation in which decision tended to flow downwards through the line of management.

The CNAA says it can see no necessary conflict between the director taking responsibility for the college's organization, management and discipline, and the academic board taking its "proper responsibility" for academic policy, and planning and developing academic work.

"The college is reminded that a *sine qua* non of a mature academic community is an ability to be self-directed and self-critical, and now is urged to move concertedly in that direction, as an essential condition of any future developments between this council and the college towards a partnership in validation," says the CNAA.

While the director had close links with the director of education, the CNAA found the local authority did not support the college's academic work as much as might be hoped.

While Strathclyde region had funded much of the recent rapid development, such as new posts and capital projects, there had been much concern within the college over the past decade over the workloads of teaching staff, the lack of technical, administrative and clerical staff, and inadequate funding of research.

Engineering 'cannot be left to academics'

by Robin McKie
Science Correspondent

The constant urging that industry should become more involved in the education of the country's engineers became almost a continual theme to last week's national conference on engineering education and training. As Mr C. H. Henn of the Ministry of Defence put it: "Engineering courses are too important to be left to academics".

Similarly, Professor Robert Smith, chairman of the Engineering Professors Conference, warned that "without the close involvement of industry it will not be possible for engineering teachers to make the transition to the new style courses we all seek".

Little mention was made of the need to have a powerful statutory engineering authority which could force such measures through. Professor S. A. Swenson, of Imperial College, London, criticized the general tenor of the debate at the conference for giving the impression there was little need for change.

He also attacked the compromise chartered authority put forward by Sir Keith Joseph, the Secretary of State for Industry, as an alternative to the Finniston plan for a strong engineering body backed by legislative powers. "Instead of the proposed engine for change all we are going to get is a seized-up old lawnmower", he told delegates.

He was backed by Mr Ken Gill, of the Trades Union Congress. "The Finniston proposals had teeth. This new body will have no machinery with which to act. Sir Keith has degutted Finniston".

He urged that the Finniston report be implemented in full, as it was neither a radical nor a revolutionary document. "It is a tragedy that immobility to change will prevent it helping the financial prosperity of Britain."

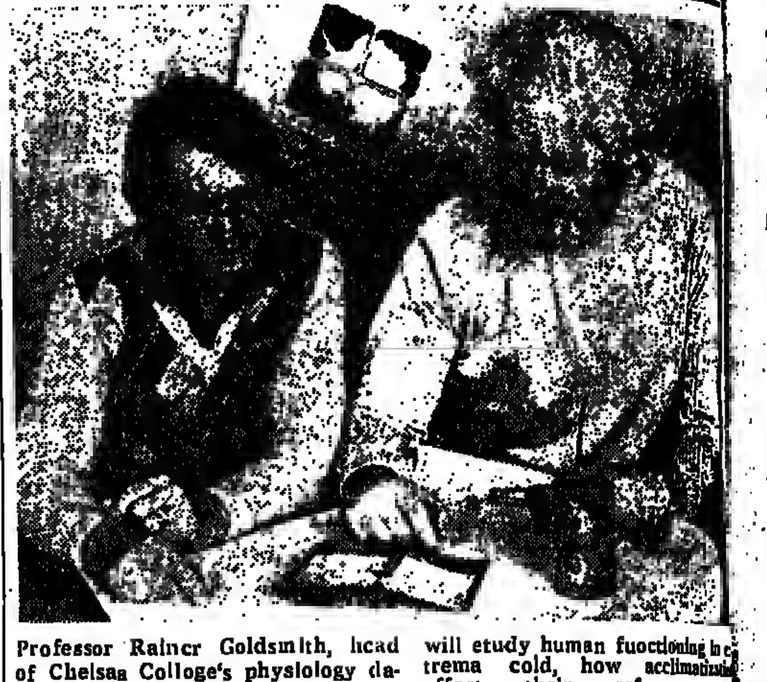
It was not a view shared by Mr G. J. Mortimer, of the Institution of Mining and Metallurgy, who supported the present chartered system organized by the Council of Engineering Institutions. "The whole idea of statutory registration smacks that all wisdom stems from Whitehall and the TUC where there has been little evidence of it in the past."

However, there was general consensus for a number of calls for changes to the Finniston plan, particularly the proposed two-tier structure for BEng and MEng degrees; the idea that registration should be based on early academic achievement; and that the title "registered engineer" should take over from the present "chartered engineer".

More surprisingly, Professor Smith revealed that the Engineering Professors' Conference had concluded that the BEng-MEng split was undesirable and that the new four-year courses should generally lead to the award of a bachelor's degree alone.

He also warned that these courses would cost an extra 40 per cent to introduce, although this was not needed immediately and could be introduced gradually. The major problem lay with recruiting and retraining staff and the need for employers to work out schemes by which they could release some of their first rate engineers to teach on campus.

"However, to ensure that whatever extra funds made available are used for the desired objectives, then specific and long-term earmarking of the extra funds is essential."



Professor Rainer Goldsmith, head of Chelsea College's physiology department, and David Layman (left) of the basic medical sciences electronics workshop, study a book and a tin of pemmican from Captain Scott's 1910 expedition to the Antarctic.

The college is to play a major part in the International Biomedical Expedition to the Antarctic which is to spend December to March in Adelie land there. The 12-man team will study human functioning in extreme cold, how acclimatization affects their performance, and whether working in the cold actually leads to acclimatization.

The expedition is sponsored by the Scientific Committee for Antarctic Research and the International Union of Biological Sciences, with further grants coming from the Medical Research Council, the Royal Society, the Wellcome Foundation, PK Morgan Ltd, Shell UK and BP.

Councils should provide guidance, conference told

by Charlotte Berry

Local education authorities should have a statutory obligation to provide separate educational information and guidance services for adults, a conference on educational guidance for adults was told at the weekend.

Ms Ruth Michaels, senior tutor for continuing education at Hatfield Polytechnic told the meeting in Sheffield that these should form a national network modelled on the structure of the existing careers service.

"Such a network would not only provide a service to clients but would be a vital bridging component between educational providers and industry. We need constant links with industry to find out what its changing needs are," she said.

Ms Michaels added that a national service is essential in the face of increased leisure, unemployment and the new technology, and the need should not be disregarded on the grounds of financial stringency.

"The need is not going to get less—it is going to grow," she insisted. "We must stress that because times are so difficult this sort of service has a much more important role than in a time of great affluence."

A national service should be staffed by full-time professional people and it should take over the role of the existing mainly voluntary groups which have a precarious existence due to insecure funding. Three have been forced to close in the past year, and more of the existing 20 services could be threatened.

"I think it's an absolute crying shame that we should have to indulge in ad hoc arrangements," she said.

Ms Michaels called for the setting up of a pressure group to persuade the DES to establish a national educational guidance service. Local development councils should also be set up to provide a forum for educational services and user groups.

Senior counsellor with the Open University's Yorkshire region, Mr Mike Redmond, told the conference that existing reports on the need for educational guidance services had failed to create impact at local and national levels. They placed the wrong emphasis, and were too bland.

"We need a strategy for development — this is now in our hands", he insisted. "We have to convince the sceptical and arouse the uninformed. We have to impress on society that we have a significant role to play."

● The British Library has granted £31,550 over two years to the Open Yorkshire region to assess education advisory services offered by public libraries. It has also awarded £2,700 to Bradford Public Libraries for six months towards the cost of developing information about different kinds of local adult education opportunities.

IEA accuses NUS over loans

The Institute of Economic Affairs has continued its war of words with the National Union of Students on the question of student loans, accusing the NUS of producing a "deceitful", "shoddy", and "stale" booklet in defence of student grants.

Professor Mark Blaug, professor of the economics of education at the University of London Institute of Education, writing in the latest issue of the IEA's journal, says the NUS has avoided the nub of the argument which is about a graduate tax system.

He says supporters of loans in Britain are out to emulate Sweden's graduate tax, not the loans schemes used in Canada and America. A graduate tax is not subject to objections such as heavy debt burdens, huge collection costs, and pressures to study vocations that maximize earnings.

"A graduate tax is therefore more difficult to attack than a student loans scheme, a difficulty which the NUS surmount with unsurpassed brilliance by ignoring it", he writes.

He goes on to describe *The Case Against Student Loans*, a 22-page report produced by the NUS last August, as "deceitful" in its use of data on social class composition and "misrepresentative" in its use of source material.

He writes that he is struck not so much by the low quality of its argument—experience has taught me to expect little in the way of intellectual substance from NUS publications—as its disingenuity.

The NUS this week immediately hit back, accusing the IEA of producing a "shallow piece of pure invective", and Professor Blaug of being the "eccentric minority of academics who believe the world revolves around their theories".

Mr Leighton Andrews, NUS vice president for welfare, said the decisions those taking the loans based talking about loans repayment and not about grants taxes.

The row between the two organizations first blew up in June when the IEA published a survey which claimed that 62 per cent of the public wanted students to be given loans instead of grants. The NUS accused the Institute of carrying out a "pathetic, unscholarly survey based on flimsy data".

The NUS believe loans will be costly, inefficient, and damaging to higher education.

Reforms give professorial priority to women

by Paul Flather

Women's colleges and former women's colleges at Oxford University are to be given priority in the allocation of professorial chairs under reforms just announced.

The university has radically revised its rules governing the allocation of professorships between colleges because women's colleges have found it difficult to attract chairs. While many of the men's colleges had three or four chairs, St Hilda's, Somerville, Lady Margaret Hall, and St Hugh's have rarely had more than two chairs each.

This was partly caused because fewer women tended to be appointed to chairs, and in part because the women's colleges were the most recently endowed and had less funds to set up chairs, some of which are hundreds of years old.

Under the new rules, the women's colleges will receive priority until each has at least two chairs; dons from Somerville and St Hilda's, the only two colleges still open to women only, appointed to chairs elsewhere, could be allowed to remain at their colleges; and seven colleges with four or more chairs will, if a woman is appointed, reallocate their chairs for one tenure to a women's college.

The first sign of the new rules in operation has already taken place, with Balliol agreeing to reallocate its chair in pharmacology to Lady Margaret Hall, which is open to men and women fellows.

Dr Mary O'Brien, senior tutor at LMH, said the new arrangements would greatly help the college. LMH will now hold two chairs in pharmacology and the Tolkein chair in English literature.

The reforms were also warmly welcomed by Miss Daphne Park, the new principal of Somerville, which at present holds only one chair in comparative philology.

Equality committee disbanded

A committee investigating problems faced by women at Glasgow University has been disbanded after it produced an interim report.

The committee of 18 men and women was established by Glasgow's court and senate last November to investigate whether equal career opportunities existed at all levels of the university. The committee issued a questionnaire to all women in academic and academic related posts but had not yet contacted female members of the clerical, domestic and secretarial staff, as it had intended.

An administrative staff member said: "In the end the committee took much longer than was first thought, and to go on was a fairly daunting prospect. The court agreed to let it disband, although at some future date it might go back to the non-academic staff."

However, some committee members said the committee had made no representations to the court to be disbanded, and felt their work had not been completed.

The interim report made 11 recommendations to the court, three of which were rejected:

● That the establishment of a creche be given highest priority.

● That appointing committees should not ask questions relating to personal or family arrangements.

● That senior women academics be invited to serve on academic committees of review.

The court has referred the other recommendations to senate, faculties or court sub-committees.

Increase in enrolments averts redundancies

Greater than expected student enrolments and the increase in fees have been instrumental in offsetting threats of compulsory redundancies at North Staffordshire Polytechnic.

The local education authority has now told lecturers' union leaders that it is prepared to look again at the 5.7 per cent saving in the 1981-82 budget. Staff will continue to be shed through voluntary early retirement and natural wastage to meet what savings may still be necessary.

But talks with education authority officials will continue on the deadlock over observance of the national agreement on redundancy procedures. Although the question is now less acute, neither side has moved from positions held before last week's half-day strike was called off. The authority is refusing to be bound by the RPA while Natfhe believes it is.

The county council has confirmed a £10m cut in the overall education budget. Further education colleges are being asked to make 5.7 per cent reductions but savings are expected to be made without redundancies.

North American News

Engineers plea for research

from Clive Cookson
WASHINGTON

University engineers have griped unproductively for many years about the United States Government's neglect of engineering research outside the defence and aerospace fields supported by the Pentagon and NASA. But now at last, as politicians and bureaucrats become more worried about America's declining industrial productivity, their complaints are beginning to receive a more sympathetic hearing in official circles.

The main focus of discontent is the National Science Foundation (*NSF*), the American equivalent of Britain's Science Research Council, which is responsible for funding general academic research in engineering. Rather like the SRC two or three years ago, the NSF is currently scrambling to disprove the long-standing theory that it is biased against applied research and engineering, in favour of pure science.

The foundation and its policy-making body, the National Science Board, hope they can satisfy the critics with an internal reorganization which would create a separate engineering directorate within the NSF. At present engineering is lumped together in directorate with applied science. (Under their plan, worked out over the past few months, applied science would be shared out among four other research directorates.)

The reshuffle is expected to be accompanied by a big increase in the proportion of NSF research funds devoted to engineering. President Carter's 1981 budget included a 20 per cent increase for the foundation's engineering programmes, and his 1982 budget, to be announced in January, is likely to propose a similar jump. This year the NSF will spend about \$60m of its \$1,100m annual budget on general engineering research.

The foundation's top officials have been spurred not only by a desire to please the engineers but also by the threat that if they do not treat engineering better it may be taken out of their hands. The professional engineering societies have dreamed for years of the establishment of a national engineering foundation, independent of the NSF; and their new umbrella organization, the American Association of Engineering Societies (AAES), recently sent President Carter a formal request to set it up.

Representative George Brown, chairman of the House science and technology subcommittee, held hearings last month on a related proposal, to set up a national technology foundation. Mr Brown, whose committee handles the NSF's authorizing legislation, said he expects to introduce a Bill to create such an agency in the next session of Congress, taking into account the testimony he heard. Testifying on behalf of the engineering profession, Eugene Zwoyer, executive director of the American Society of Civil Engineers, told the committee: "It is the position of the AAES that the National Science Foundation provides insufficient encouragement and funding for applied or engineering research, in contrast to basic research".

At the heart of the debate is an unresolved science policy question: Should the NSF assume the same responsibility of the general health of engineering as it has always done for basic science?

Not only the engineers are concerned about the existing set-up. Some academic scientists in other fields fear that their BSZ will suffer if engineering gets more money and power within the NSF at a time of fiscal restraint. Admittedly President Carter seems to have a genuine belief in basic scientific research, but what about Ronald Reagan, if he is elected?

The growing concern about the health of engineering research is linked to worries about the shortage of engineering manpower that is developing in the United States. Poor equipment and facilities in university engineering laboratories, and the difficulty of getting research grants, are widely blamed for the general inability to attract bright graduates into postgraduate research and then into careers as university teachers.

Financing must stimulate universities, says report

Canada must develop a new way of financing its universities, to give them more incentive to innovate and improve teaching and research. Otherwise they will find themselves acting out the "sclerosis scenario" as funding and student numbers decline over the next 20 years.

Peter Leslie, Associate Professor of Political Science at Queen's University, Ontario, gives that warning in a long-awaited report to the Association of Universities and Colleges of Canada (AUCC) on university funding. It appears at an apposite time, for the federal and provincial governments are likely to begin renegotiating their fiscal arrangements next year, and the financing of post secondary education is bound to be a major issue then.

Canada's university presidents will meet in Calgary next month to consider the report and perhaps decide how they want the federal and provincial governments to allocate financial responsibility for higher education. At the same meeting the presidents will discuss a related question—Prime Minister Pierre Trudeau's controversial plan to "bring home" the Canadian constitution from Britain. "The universities are studying the place of post-secondary education in the constitution", said an AUCC spokesman.

Dr Leslie argues in his 446-page report that the federal and provincial responsibilities should be made much clearer and more distinct. In particular he recommends phasing out the Established Programmes Financing arrangement under which Ottawa gives the provinces vast sums, with no strings attached, to support post secondary education. The cash transferred for post secondary education in 1979-80, \$1,500m, represented 45 per cent of university operating expenses.

The trouble with the existing arrangement, Dr Leslie says, is that it causes tensions between Ottawa and the provinces. The federal government feels that it is entitled to some say in the way its cash contributions are spent. But "all provincial governments resent any suggestion that the federal government can buy its way into influencing provincial policies in any sphere, and least of all in education," Dr Leslie writes. In fact the provinces have treated the federal transfers as general tax revenues, since they come without conditions under the present law.

Operating support for universities should become an exclusive financial responsibility of the provinces, the report says. The provincial governments should adopt funding formulae that are more responsive than their present university operating grants to changes in student numbers.

In a key passage, Dr Leslie writes: "A university's reputation as a teaching institution must be made to have some bearing on the financial resources made available to it. In short, there must be rewards for attracting students and penalties for driving them away, and this implies a financing technique which is fairly sensitive to enrolment, at least over the longer term. Only under these conditions can an institution have any financial incentive to take its teaching function seriously, to redesign academic programmes and to revise curricula to meet changing needs and to reflect changes in knowledge, and to reward its faculty for excellence in teaching.

Having given up its financial support for the universities' general operations, the Canadian Government should strengthen its support for research and other specific programmes in clearly identified areas of federal responsibility. They include: equalizing educational opportunity in all parts of Canada, by means of student financial aid, promoting excellence in research and scholarship, bilingual grants to promote French in English-speaking Canada and English in Quebec, and meeting Canada's international obligations, for example by supporting student and scientific exchanges with other countries.

Dr Leslie, whose report was commissioned in 1978, sees the federal government deriving maximum impact from its support of universities by concentrating financial resources on adequate funding of direct and indirect costs of research, including researchers' salaries.

Looking more generally at the future, Dr Leslie believes "the outlook almost everywhere is for a contraction in enrolments, a long period of shrivelling financial resources, and external pressure to eliminate what one university's commission has called 'the redundant, the obsolete and the unnecessary'.

"The most serious problem facing Canadian higher education is the prospective aging of university faculty; its greatest challenge, to avoid the loss of an academic generation," the report continues. "Although the number of replacement positions is difficult to predict with any accuracy, it is nonetheless clear that during the next decade the influx of new talent will be minimal and that the median age of the professoriate will increase steadily."

Dr Leslie thinks "it is not only possible but likely that over the next few years Government controls will tighten as enrolments fluctuate or decline and as other governmental expenditure priorities assert themselves. Existing financial techniques encourage university administrative officers to adopt a strategy of general budget compression rather than to redefine their priorities and to accept and promote significant structural change. In the absence of such change, governments are likely, as the situation becomes more acute, to draw the administration of universities into their own hands. This is not, I think, a present intent, but it may be fatalistically a consequence of the evolving situation".

That is the "sclerosis scenario", and the Leslie report contains many prescriptions for avoiding it. The book, entitled "Canadian Universities 1980 and Beyond", is available from the AUCC, 151 Slater Street, Ottawa, Ontario, at \$15 in Canada or \$19 for copies sent overseas.

Greater staff-student contact needed

University of California President David Saxon has asked faculty members to spend more time in direct contact with students. His request followed the release of the university's third annual Faculty Time Use Survey, showing a significant decline in the average number of hours spent teaching and preparing courses.

"Although we do not as yet understand the reasons for the downward trend, it seriously concerns me, and therefore I believe it prudent to respond directly and positively to a situation that may have significant consequences for the university", Dr Saxon said in a letter to the nine UC campus chancellors.

A university spokesman said the chancellors were given a month to "make a careful study of the decline" and report their findings back to President Saxon. They were also asked to work with deans, departmental chairmen and faculty members to increase scheduled class hours and restore the pattern of instructional activities to the levels recorded in the first Faculty Time Use Survey for 1977-78.

For the longer time, Dr Saxon wants every academic department in the university to establish and implement a policy for faculty teaching workloads. Donald Swain, UC's vice president for academic affairs, is preparing university-wide guidelines for these policies.

The 1979-80 Faculty Time Use Survey shows that regular each full-time faculty devoted an average of 27.5 hours a week to all instructional activities, compared to 28.4 hours in 1977-78.

The Faculty Time Use Surveys are conducted at the request of the state government by the Institute for Research in Social Behaviour in Oakland, and based on time records reported by a representative sample of 2,200 of the 9,000 UC academics. The publication of last year's survey prompted some calls for heavier faculty teaching loads, but President Saxon's quick response may preempt the critics this time.

Education levels up

The educational levels of the American people increased markedly during the 1970s, according to a Census Bureau report. In 1978/79, 68 per cent of the adult population of the United States had finished high school, compared to 53 per cent ten years earlier.

Thirty-one per cent had completed at least one year of college, 10 per cent more than in 1968/69, and 16 per cent had four or more years of higher education, up five per cent.

Robert Frosch to leave NASA

The administrator of the National Aeronautics and Space Administration (NASA), Robert Frosch, will resign in January to become the first full-time president of the American Association of Engineering Societies (AAES). The association was founded early this year as a federation of 40 societies representing a million professional engineers.

Dr Frosch, who has headed NASA since 1977, will be an effective national leader for the engineering profession, the AAES believes.

Unfortunately Dr Frosch's background is in physics, rather than engineering, but a spokesman for the association said that did not matter because "people from a lot of diverse backgrounds go into engineering.

Robert Frosch: future president of AAES.

Arab cheques for Georgetown

Arab governments are showering gifts onto Georgetown University's Centre for Contemporary Arab Studies in Washington D.C. Oman's ambassador to the United States has just presented Georgetown with a million dollar cheque to endow the Sultanate of Oman Chair in Arab Studies. Last month Kuwait gave \$1m to establish a professorship in contemporary Arab affairs, and in May the United Arab Emirates endowed a chair for \$750,000.

Since the five-year-old centre is part of the university's large and prestigious School of Foreign Service, some Jewish groups are highly suspicious of the Arab gifts, totalling \$3.4m from eight countries, which they see as an attempt to buy political influence in the American capital. Ira Silverman of the American Jewish committee has accused the centre for Porery Arab Studies of "clearly marked pro-Arab, anti-Israel bias in its selection of curriculum material, its faculty appointments and speakers".

But Georgetown officials indignantly deny such accusations, which have been attributed privately to anti-Arab prejudice.

Speaking at the most recent presentation ceremony, Georgetown president Timothy Healy said: "The Oman Chair will enhance Georgetown's mission to provide a liberal education by strengthening our competence in one of the great classical civilizations."

Falling entries prompt re-think on college role

from Charlotte Beyers
SAN FRANCISCO

Colleges must look carefully at changing student populations, as increasing numbers of young people are choosing not to go on to higher education, Dr Ernest Boyer told the American Council on Education's annual conference in San Francisco.

"At both universities and high schools the general education core curriculum is in a serious state of disarray", Dr Boyer, president of the Carnegie Foundation for the advancement of teaching, continued. "As colleges become more and more confused about general education, so do the higher schools. One state offers 1,200 courses in the secondary schools. Within that broad array, there's not much agreement on what represents the essentials."

Within the next five or 10 years priorities must be established for a core curriculum, Dr Boyer emphasized.

"We need to think more clearly about what we mean by evaluation and assessment. Colleges, not legislators, must decide this", he warned.

Other members of the panel include Dr Franklin Wilbur, from Syracuse University, Dr Robert Wentz, superintendent of St Louis public schools, and Dr James Gray, director of the Bay Area Writing Project. Each member of the panel explained an educational model that attempts to unite the university and high school campuses.

Dr Wilbur, director of Project Advance, said: "Our programme is targeted at having high school teachers and professors work together in common areas of interest. About three years ago we found that our college courses were not working well for our extremely diverse student body. We had students from 50 or 60 different countries whose college board scores ranged from 400 to 800. We began thinking about how students could move creatively through courses at different rates," he said.

Then a group of high school teachers and heads approached the university. They were having trouble motivating their senior students. The better the student, the better the school, the more problems. As students reached their final year, they had very little left to do.

Over the years the programme has expanded to 75 schools in six disciplines. It involves more than 300 faculties serving around 4,000 students a year in 350 separate institutions throughout the country.

Dr Wentz's programme in St Louis uses a small administrative staff. He asks schools to identify specific problems. Using both the business community and the university as resources, he tries to fulfill a variety of needs. As an example, he cited the visual and performing arts high school. He found university teachers and students who were able to work with high school student directors and producers. Together they improved the quality of the school plays.

Dr James Gray's Bay Area Writing Project, based at the University of California, Berkeley, represents still another attempt to unite teachers from the colleges and the schools. Now the programme has spread to 75 sites among 37 states. It started with the discovery that 40 per cent of all Berkeley students needed to take "remedial English" in 1973. "They simply could not write," Dr Gray said.

Clive Cookson,
North American Editor,
The Times Higher Education Supplement,
National Press Building,
Room 541,
Washington DC 20045;
Telephone: (202) 638 6765.

Overseas News

'Learning factory' sets up crisis centre

from James Hutchinson

BONN

The University of Bochum, conceived in the early 1960s as a model campus, has acquired the reputation of being West Germany's most impersonal *Lernfabrik*, literally a learning factory. Its students long since set up a society to help people with suicidal tendencies, and recently university funds were provided to establish a "crisis intervention centre".

Some 35 suicides were recorded among Bochum's students between 1969 and 1979, and 62 deaths from unknown causes were also registered. The crisis centre is designed to help students solve a variety of personal problems, and in particular to assist newcomers.

The foundation of the Ruhr university at Bochum was an important event in German academic life. A concentration of professors and students in the industrial area was a novelty. Kaiser Wilhelm II had been determined that the region should remain exclusively a place for hard industrial labour, and decreed that neither universities nor army barracks should be built there.

But the architects of the Ruhr university appeared to forget that the campus was to be used by people, and should ideally be a centre of human contact. The university, which now has nearly 30,000 students, consists of a labyrinth of ugly concrete blocks, and many people who have spent several years there still have difficulty in finding their way about.

Indeed the story is told that the principal architect was to receive an award for his design, but was unable to find the hall where the ceremony was taking place. Instead of walking across the campus (and running the risk of getting lost) many students prefer to drive to their destinations along the perimeter road. The buildings are identified by what sounds like a secret code. GA-FO 04/611, for instance, stands for Institute of arts, block A, area east, storey 04, room 611.

Nearly two thirds of the students live at home in various parts of the Ruhr and commute to the university which has parking spaces for 8,000 cars. The students' typical day is similar to that of a white-collar worker: drive from home, find a parking place, up in the lift, lecture, down in the lift and home again. Most students arrange their courses so that they need not travel to Bochum more than two or three days a week.

But the real problems are faced by those 5,000 students who live in the cheerless hostels on the campus.

£20m to be spent under the sea

from Guy Neave

PARIS

A new boost is to be given to France's ocean research programme. Compared with 1980, the budget for the coming year is to be increased by 30 per cent to £20.8m.

The increase is to assist three new priorities in the area of ocean bed exploration. The first will be the construction of a mini reconnaissance submarine capable of reaching depths of up to 20,000 feet. Additional resources are to be devoted to research into marine pollution. A second priority will be exploration of the sea-bed to locate new sources of oil and a third priority will be on exploration for metal nodules in the Pacific.

Though ambitious, these programmes are running into difficulties as a result of the decision earlier this year to split responsibility for ocean research between different ministries. Fishing and aquaculture comes under the aegis of the ministry of transport and programmes involving mineral and energy resources fall under the ministry of industry. The ministry of higher education is to finance those areas not covered by the other two.

This division of responsibilities is causing serious difficulties by emphasizing the separation between applied research, fundamental research and development work. This is a particularly large problem in the field of oceanographic [illegible] which relies heavily on large scale equipment. It has also prevented the emergence of a coherent overall research strategy.

Earlier this year when the [illegible] was first outlined hopes were expressed that the national centre for ocean development (CNEXO) would act as a major liaison body but so far this has not happened. The ministry of industry for example has refused to fund the deep sea exploration programme for [illegible] reserves, leaving this to the ministry of higher education. The ministry of transport has so far shown itself unwilling to unveil its future programmes.

Striking Polish workers demanded the "free activity of society".

'University' comes out into the open

Poland's unofficial "flying university" (the Society for Academic Courses) has re-emerged from the shadows. After a year in which police harassment has reduced its activity to closed secret seminars, the SAC is openly recruiting for 16 lecture courses to be given in Warsaw, Krakow, Wroclaw and Poznan.

Dr Andrzej Drewicz, head of the SAC syllabus committee said last week: "The present atmosphere in Poland is a call to open and public activity." The need for the society's type of lectures, he said, is ever increasing. The new "self-governing" students' movement and the federation of independent trade unions are, he said, "new friends of the SAC". There is a growing feeling of unity among the cultural and educational community.

The SAC was founded early in 1977 to counter the official monopoly of teaching which, in the opinion of the organizers, was producing distortions (whether by commission or omission) in the presentation of history, sociology and literature. The SAC was openly backed by almost 100 leading scholars, and according to its "dean" Dr Jan Kielanowski, it had to ask many younger academics to refrain from open support which might ruin their careers. (Those who signed the SAC documents were mostly retired or approaching retirement, or had already incurred the displeasure of the authorities.)

Originally the SAC gave public lectures in structured courses, held in private homes, or, occasionally, on church premises. For two years the authorities mounted an increasing campaign against the movement, starting by swingeing fines on householders who allegedly contravened safety regulations by allowing up to 100 people into their apartments and ending with the 48-hour detention of intending lecturers and the breaking up of lectures by organized gangs of hooligans.

Since October 1979, except for one attempt at an inaugural lecture, the activities of the SAC have been driven entirely underground.

The announcement that SAC would resume open activity came only a few days after the senate of Warsaw University issued a demand for academic freedom and democratic reforms. Convinced that the Gdansk Accords which concluded the summer strikes must be fully implemented if social injustice is to be righted and the economic crisis overcome, the senate called for "renewal and stabilization" in the political sphere and the cooperation [illegible] the "free activity of society" [illegible] the economic system.

The statement said: "[illegible] of its co-responsibility, the [illegible] favours revitalization of [illegible] of Parliament and local representative bodies, reform of the [illegible] system, separation of the Party [illegible] administration, representation [illegible] self-governing trade unions [illegible] ing the students' union) and [illegible] guaranteeing of freedom of [illegible] and the publication of [illegible] mation on national and international affairs."

The basic role of the university, said the senate, is to [illegible] academic research, preserve [illegible] culture and provide for the [illegible] tion of society. Commissions [illegible] experts should be set up to [illegible] that these aims are implemented [illegible] and the results of their deliberations must be made available. Essential reforms within the university and higher educational system [illegible] include the granting of self-governing and democratic status to [illegible] ing and democratic status to [illegible] giate bodies, senates, and faculties to decide on directions of research.

Students and staff should [illegible] represented on the university governing bodies, and there should be guaranteed free access to publications and sources of scholarly information. Academic appointments should be made on the basis of academic qualifications and [illegible] ability only, and there should [illegible] freedom of organization for students.

Professor hits out at graduate 'poaching'

from Geoff Maslen

MELBOURNE

Leading British electronic firms were "picking off" Australia's top engineering graduates and contributing to a critical shortage of engineers.

This would reduce Australia's participation in its own multi-million dollar energy projects, according to the President of the Institution of Australian Engineers, Professor Lance Endersby.

"I get rather upset when top British electronic industries just come along and pick off our top graduates—they know they'll create the future for their firms", Professor Endersby told a conference on electric supply 1980 in Sydney.

Professor Endersby said Australia was facing a 35 per cent decline in the number of engineers graduating from universities and colleges over the next three years. This would undermine Australia's ability to be equal to the challenges offered by overseas companies in the development of the country's resource projects. These projects were likely to start in the energy intensive industries of electricity supply, mining, aluminium and petrochemicals, and could be worth up to A$80,000m in the next 10 years.

"But are we equal to these tasks? We are short of skills right now and we are certainly not producing the engineers we need", Professor Endersby said. He claimed that too many Australian teachers were anti-technological and too few had been adequately trained in mathematics and science.

The result was that students were not studying mathematics, physics or chemistry. "They're all doing sociology and somehow we've got to correct that. It's sad to see all this emphasis on finger painting and what-have-you", Professor Endersby said.

Professor Endersby, an outspoken engineer from Monash University, said that 2,850 engineers graduated in Australia last year. By 1983 only 1,850 would graduate—a decrease of 35 per cent. "We're in the position where these aluminium projects are starting, where there's to be a great expansion in electricity supplies and yet the number of engineers we graduate will fall by more than a third in three years."

This would seriously reduce the extent to which Australia and Australian industry would be able to participate in projects built on Australian soil. The technical brain drain caused by the poaching of British firms was exacerbating the situation.

Right-wing victory could split union

from Benny Morris

JERUSALEM

Israel's National Union of Students (NUS) is faced with a major split following the election of an extreme right-winger as its chairman.

Tzahi Hanegbi, son of ultra-right-wing Knesset member Geula Cohen and last year's chairman of the Hebrew University Students' Union, was elected NUS chairman by the block-voting delegations for Jerusalem's Hebrew University and Telaviv University. This was reinforced by some students from Bar-Ilan University, the Hebrew University and Telaviv University whose current student union leaders are affiliated to the country's ruling right-wing Likud Party. Together they account for 52 per cent, or some 30,000, of Israel's students and hence dominate the NUS council. These leaders, such as Hebrew University student union chairman Israel Katz, identify with the ultra-nationalist wing in the Likud or with its splinter group, the U Tehiya Party.

Hanegbi's election was opposed by the representatives of the unions of Beersheba's Ben Gurion University, Haifa University, the Haifa Technion and the Weizmann Institute, and by the majority of the Bar-Ilan University representatives.

Hanegbi, like his mother, is affiliated to the New Tehiya Party, a breakaway faction from Prime Minister Menachem Begin's Likud.

Hanegbi last year faced internal disciplinary hearings at the Hebrew University for allegedly leading [illegible] campus against left-wing Jewish and Arab students.

He was acquitted because of—according to the university court—"conflicting testimony", but still faces police proceedings over the incident.

The student unions of the Technion, Haifa University and the Weizmann Institute announced that they are considering the legal and financial consequences of possible withdrawal from the NUS. They charged that Hanegbi wants to turn the NUS into a "political body," and that he has already started working on the campuses with an eye to the general elections of 1981.

The opposition unions are considering establishing an alternative national union which will "look to students' interests and affairs, and leave politics to the politicians," said Shadar Nehav, a member of the Weizmann Institute's apolitical student union council.

Legal tangle halts admissions

No new admissions have been made to Sri Lanka's universities this academic year because the country's university grants commission's admissions policy is being challenged in the courts.

The Supreme Court upheld a challenge by a woman candidate who claimed that she had been denied equality of opportunity guaranteed by the constitution by the operation of a ratio of 7:3 of candidates who had qualified at two different A level examinations.

The court directed the UGC to admit students to the medical course (to which the woman had applied and was otherwise qualified) on the basis of the highest aggregates in an integrated or consolidated list of candidates who qualified at the examinations.

The UGC was working on a scheme complying with the court's order when another woman candidate went to the court of appeal asking for an order on the UGC to admit her to a medical course.

The court directed the UGC to reconsider her eligibility on certain criteria which the court laid down. One was that, instead of the limit of 400 the UGC had imposed on admissions, it should extend the number to 409 as the Cabinet had decided. Another was whether, if the Colombo district had not been subdivided retrospectively and 48 places allotted, would she have qualified for admission last year on the results of the A level results of 1978?

The UGC's further decision to reserve 55 per cent of places district-wise in proportion to the population of the 24 districts of the island is now under challenge in the Supreme Court.

Meanwhile a 430-bed teaching hospital (a gift from the government of Japan) has been opened to serve the medical faculty of the university of Peradeniya.

A fourth medical faculty is scheduled to begin functioning at the University College of Ruhuna in the south.

The authorities have also decided to increase the amount of loans given to university students who need them from a fund set up a few years ago.

Japan asked to aid Asian university

The Japanese Government is c[illegible] sidering a request to assist in the construction of an ASEAN (Association of South East Asian Nations) University in Indonesia.

The request—and the idea for [illegible] new institution—came from a [illegible] of ASEAN graduates of Ja[illegible] universities.

They have proposed that the university be built in West Java [illegible] have also called for support [illegible] other Asian governments.

Singapore recruits

The National University of Singapore plans to recruit hundreds [illegible] foreign lecturers, mainly [illegible] Britain and the United States [illegible] the next five years to improve teaching standards.

The university was established [illegible] August by merging the English-language Singapore University with [illegible] Chinese-orientated Nanyang University.

In his continuing series on 'hidden research', Robin McKie visits Kew Gardens

The science lab with branches everywhere

Plant research invokes a dusty image of scientists pouring over samples of old dead leaves and dried flowers. In fact, as scientists at Kew Gardens quickly point out, it can lead you down some rather unexpected paths.

Take work being carried out at their Jodrell laboratory which specializes in plant physiology, biochemistry and anatomy. One of its services involves the identification of fragments taken from any grown material. These can include pieces of driftwood, furniture, sawdust, drugs and even charcoal, which can be typed from microscopic detail of the original wood.

No inquiries are turned down and the service is provided free of charge. Scientists have even been sent the Weeping Madonna, a figure alleged to produce tears, and parts of the sunken galleon, Mary Rose, for investigation.

It is a role that brought the Jodrell to the fore during the major 1976 drought in England. "We were inundated by hundreds and hundreds of samples of roots sent in by solicitors, surveyors and house owners who had found them under property affected by subsidence or cracking," said Professor Keith Jones, keeper of the laboratory.

The problem stemmed from nearby trees. Affected by the drought, they sought water through the spreading of their roots. In clay soil, this caused shrinkage round these roots and buildings above often suffered cracking as a result. Identifying the types of trees responsible then became a preoccupation for solicitors and surveyors anxious to trace the exact tree causing the problem.

"In the end we were forced to start charging for the service and people had to pay £5 a root for the privilege", added Professor Jones. Now they pass on such samples to a private consultant for identification.

However, the plant researchers have not been resting on their laurels. With support from the British Insurance Association, they have carried out further research into root spreading, the distances involved, its effects on buildings and those trees which are the worst culprits.

The results will shortly appear in a handbook on tree-planting to be published by Construction Press, and which is aimed at helping landscape planners, engineers, architects, and builders with problems that might arise from indiscriminate planting of trees.

"We are proud of our tree-lined streets, yet we could find them cleared if found to cause damage to housing", said Professor Jones. This would happen if the wrong sort were planted in city areas with clay sub-soils.

In fact, willow turns out to be the worst offender, although Professor Jones added that it would be wrong to be too concerned about this as other factors were also involved in subsidence and foundation cracking.

The laboratory's work provides a clear illustration of the importance of the research at Kew, which carries on a tradition dating back to 1759 when a small nine-acre botanic garden was established in Kew House Estate. Under the succeeding reign of George III, the neighbouring Richmond House estate was merged with that of Kew House and the work of botanic garden was established. Later in 1841, the garden was acquired by the nation on the recommendation of a committee appointed by the Treasury.

Over the years, additions to the gardens included the Herbarium, the museums of economic botany, and later the rich-soiled estates of Wakehurst Place in Sussex. The result is one of the most beautiful gardens in Britain, a unique living collection of botanical material, and a major source for basic research by scientists.

One of its major facilities is the herbarium, established in 1852, and which is claimed to house one of the largest collections of its kind in the world. It consists of about five million dried plants, 35,000 glass jars of flowers and fruits in liquid preservatives, and a major collection of fruits and seeds.

Its work is divided between the curation and the maintenance of the collection; the routine naming of specimens; and research into new species. It all concentrates on one particular area—taxonomy, the precise identification and classification of plants.

"It is an art as well as a science," said Mr Peter Green, deputy director of Kew and keeper of the herbarium. "Some people have a gift for it and can recognize similarities and differences between species with ease. They are simply born taxonomists."

Their work is of crucial importance in providing a baseline of information for other researchers. There is no point in investigating the properties of a plant if the samples being researched consist of more than one species or if they can be confused with other similar types.

Increasingly, Kew is also becoming a focus in the conservation of endangered species of plants, of which about 2500 are now threatened, particularly those from tropical rain forests where commercial development is causing major destructions of large sections of land.

"The idea is that by growing rare specimens here, they can then be returned to the wild at a more suitable time. However, it is a very poor second-best to properly preserving the wild areas of our planet, because you cannot reproduce the world's tropics inside a few glasshouses," added Mr Green.

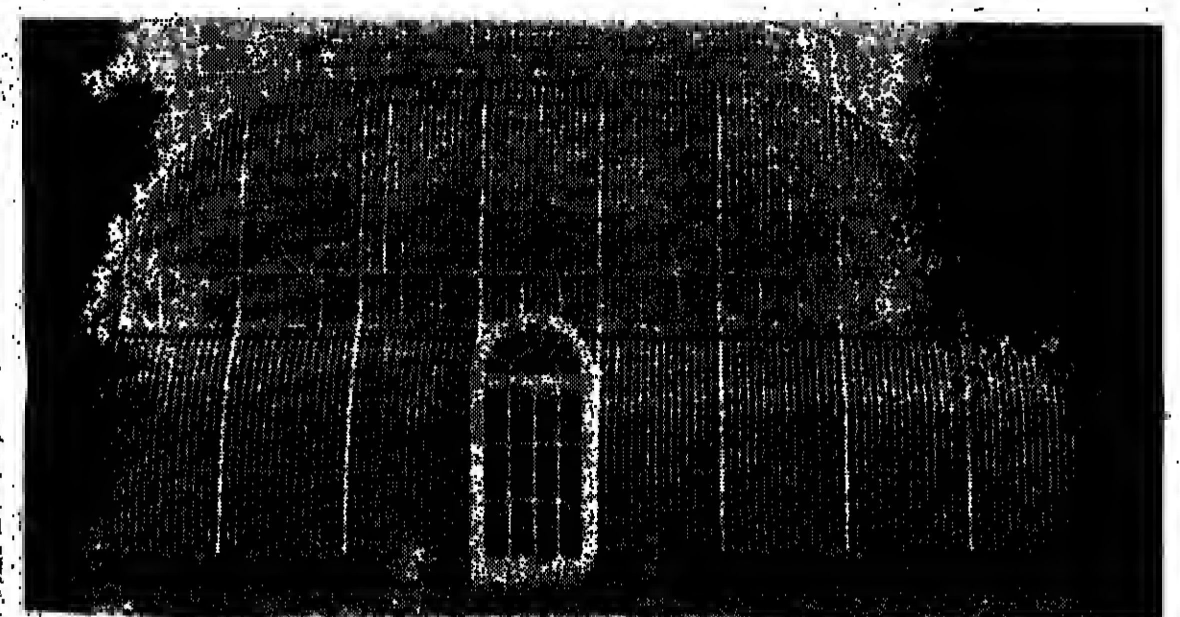
Yet work is not limited to looking after the gardens and organizing research. The gardens have an important educational role, particularly running the Kew diploma, a three-year course, at present attended by 60 students, that concentrates on the managerial aspects of amenity horticulture.

"We have several degree holders on the course, and have had PhDs in the past, although they need only get A levels to get in", added Mr Green. "A Kew diploma is highly regarded throughout the world and in many ways is as good as a bachelor degree in horticulture, and in many ways goes beyond it".

Other educational links include ties with various universities, such as Reading and University College, London, and the establishment of visiting professors, such as Professor Jones. His laboratory also receives Science Research Council grants and the Agricultural Research Council also assisted in setting up the biochemistry laboratory at Jodrell.

Its work has concentrated on chemicals found to be packed into seeds and which were once thought to be useless as they seemed not to have any nutritional function. Now research on various tropical plants suggests that these chemicals may be vital in protecting seeds from various insects and could reveal them as a source of new antibiotics, anti-tumour agents and drugs for treating ailments such as Parkinsons disease.

The course of these developments will be shaped by research carried out at centres such as the Jodrell laboratory. It could prove crucial to the future of agriculture and, as stated, is certainly far from the image of the old dead leaves and dried flowers.



The palm house in the centre of the gardens. Crown copyright

The pagoda at Kew. Crown copyright

Ngaio Crequer reports on the work of a committee with a daunting task

Why London University finds itself in Dyer straits

In the last six months Sir Peter Swinnerton-Dyer has been sifting through countless documents telling him how good the schools of the University of London are.

He has read of departments that are unique, of courses that meet essential national needs and of buoyant student demand of consistently high quality.

Universities are generally bad publicists. But if they are ever under attack in the future they might do well to present some of the evidence they have marshalled together to present to Sir Peter.

However his job is the critical one. The documents are the submissions presented to him by the schools in his role of the committee of academic organization at London University.

Although heads of schools, in their personal contributions to the inquiry, may have been more pertinent and certainly more punchy, the more public school-wide submissions have volunteered no hostages or sacrifices.

Sir Peter and his eight-member committee were given the task of reviewing every aspect of non-medical education at the University. They are charged with finding ways of maintaining and developing the university's teaching and research and attempting at the same time to safeguard jobs.

The committee was set up at the beginning of the year because of the need to plan for a projected drop in the birth rate, with its implications for student demand, in the decade following 1983-84. On top of this was the belief that funding for universities was likely to fall in real terms, and the decision by the Government to charge full cost fees for overseas students have added impetus to the need for an overall plan.

Sir Peter has said that he is not then concerned with immediate events. He is thinking of the future of the university over the next 10 to 15 years and he believes his committee should make recommendations for "large financial savings" over such a period.

He has, though, it seems, ruled out one method of achieving large savings, that of making academic staff compulsorily redundant. He has written to a London branch of the Association of University Teachers to say that the loss of morale, the selection problems, legal difficulties and the cost would provide insurmountable obstacles to such a course.

The alternative, one presumes, lies in merger, either of whole colleges or of departments within the University as a whole. The colleges, with few exceptions, say they already collaborate where it has been found to make good academic sense, and that merger per se is not necessarily cost-effective.

University College said in its submission it "... has no intention of moving beyond the very valuable and fruitful co-operation within the university that already exists towards some possibly illusory objective of achieving questionable savings through mergers, takeovers, exchanges or other so-called 'rationalization' ...".

It has no "tail" of weak departments that would benefit from being absorbed into departments at other schools. It has only strong departments and exceptionally strong departments. Nor does it have the room to accommodate departments on offer from elsewhere.

This is not to say that University College is against voluntary collaboration with other schools, where desirable, and it gives examples. UCL and Westfield combine in the teaching of History of Art, and UCL and King's collaborate in Modern Iberian and Latin American Studies.

In both cases UC says that to go further and physically merge the staffs would produce no savings but damage other joint courses in the respective institutions.

Collaboration is helpful and it is being done, but merger would be disastrous. "Long-serving members of the UCL staff can remember no period when the University of London was abstaining from active discussion of the potential gains to be achieved by mergers and other 'rationalization' exercises. Almost every possibility has been studied many times and the advantages and disadvantages exhaustively probed."

And the one exception, says UC, possible takeover of the School of Slavonic and East European Studies, if staffs agree, is being pursued anyway outside the present inquiry.

The King's submission, though curious in the way it offers up subjects which are "not vital" then claims them back by stressing their distinction, echoes the weariness of London with rationalization.

It says that much time and effort has been expended at the university in the past on the topic of rationalization, "so far without any noticeable success". It doubts whether amalgamation of two or more departments would lead to significant savings.

Westfield regrets that the inquiry does not seem to realize the extent of existing intercollegiate activity. It supports the "collaboration—yes, and amalgamation—no" line and says that because of interdependence of internal courses mergers would be difficult and damaging.

The LSE has told the committee that there are the strongest possible academic arguments against the shedding of subjects and no financial ones for their curtailment although there will always be organic change.

The Institute of Education refers to the suggestion that has been made several times in the past that King's work in education could be assimilated by them. But there would be little academic advantage, it says and only small financial savings. The two were complementary rather than competitive. It makes the same point about amalgamating subjects at Chelsea College and the Institute.

But not all the colleges have given an outright "no" to amalgamation, although none examines it in very great detail. Lord Flowers of Imperial College, now on the other side of an inquiry, calls for radical measures and greater devolution.

The Imperial proposals are as controversial as any the committee is likely to come up with. It sees different roles for larger and smaller schools. "The larger and more viable" are ready to benefit from greater autonomy. "Some of the smaller and more vulnerable" could concentrate resources on limited objectives.

Two of London's smaller schools, Chelsea and Queen Elizabeth College have said that departments from different institutions could be merged, in some cases.

Chelsea says that there is a need to maximize one of the greatest advantages of the federal system, which is the scope for sharing expertise, equipment and other resources. But any reorganization must not restrict the freedom of diversity enjoyed by the colleges, by imposing extra layers of control.

According to QEC reducing the number of departments in a given discipline within the university would give coherence and strength. It says that the desire by each college to teach a wide range of subjects depresses standards and increases costs.

The Swinnerton-Dyer committee has two choices. It can respond in kind and tinker about round the edges, just to justify its existence. But this would clearly not produce any large financial savings.

Or it could propose some large-scale amalgamations of departments, and even schools that would hit deep into the heart of London University. But proposals of that nature are a long way removed from implementation.

The post-E epoch: courses that refresh parts worth reaching

Last week the Government published a new discussion paper on continuing education, calling on universities and colleges to mount more mid-career courses for older men and women. Here Charlotte Barry examines the new discussion document and Peter David (below) reports on the unpublished civil service study on "Model E", which preceded it.

The Government's new policies to encourage more mid-career refresher courses in universities and colleges are intended to be a quick-fire method of advancing better economic growth and a more relevant workforce.

They are only a small part of equally relevant and much wider developments being sought by workers in the whole field of adult and continuing education.

The new discussion paper, *Continuing education: post-experience vocational provision for those in employment*, is not meant to be a broad philosophical document. It is attempting to promote a practical course of action which can be implemented rapidly at the minimum public expense.

"Rapid social and technological changes underline the importance of continuing education to the full development of the individual, to the well-being of society in which he lives, and to the strength of the economy which underpins it", it says.

"We must develop the qualifications and skills needed in the country's workforce if managers and employees at all levels are to be able to meet successfully the complex challenges facing them and to promote economic growth."

The paper's main concern is to remove the financial and administrative obstacles preventing universities and polytechnics from mounting short, part-time courses. However, it concedes that much work is already being done.

At the moment institutions meet the need for post-experience courses through three main broad types of provision. These are longer courses leading to a qualification; short courses, conferences and seminars on particular topics; and tailor-made courses geared to a specific sector, usually at their request.

The statistics reflect a considerable development in this area over the past decade. Students on the short and tailor-made courses cannot be clearly identified, but many of the 70,000 enrolled on short courses in polytechnics in 1979 (25,000 in 1972) are estimated to have fallen into this category. So are the 57,000 doctors and dentists enrolled on short postgraduate courses in universities in 1978/79.

Most of the 230,000 enrolments on courses run by extra-mural departments in 1978/79 (197,000 in 1972/73) were not engaged in updating work, but some would be on refresher courses designed for groups such as teachers, magistrates, social and health workers.

A more detailed picture can be seen in the universities in 1978/79. About 367,000 students were enrolled in 15,552 short, post-experience and vocational courses. Of these, 2,552 postgraduate medical courses and 97 per cent of the 2,569 non-medical courses mounted in university departments were also vocational.

More than 1,100 (7 per cent) of all university short courses were attended by students from United Kingdom industry or commerce, and only 638 courses led to an award. More than 1,100 (14 per cent) of 8,037 extra-mural courses were vocational.

Nearly 8,000 (51 per cent) of all courses involved no more than nine meetings or seven days' attendance. Nearly 3,000 (18 per cent) were full-time for short periods. About two-thirds of the courses did not require consecutive attendance, and those that did were mostly for periods of seven days or less.

The Open University is expected to have 39,000 students in 1981 on courses outside the first degree programme made up of 7,000 associate students and those on specially designed refresher courses. This will include 14,000 following other short courses in the post-experience programme.

In encouraging more institutions to mount this kind of short, part-time course, the Department of Education and Science intends employers to meet the full costs involved. Changes in financial and administration procedures will provide further incentives.

The document suggests that where a course is entirely self-financing the departments concerned could keep the whole fee income to pay for it and future development. But this would only be practicable where there is clear demand for a course, teaching staff can be released for short periods and charges are not prohibitive.

Where institutions rely on public funds to develop a new course, the funding body should deduct that amount from future grant levels.

As there will be additional demands on staff time to identify needs, consult with employers, develop new methods, promote courses and assess students' work, lecturers working in this area should be paid more, the paper says. In addition heavy involvement could be offset by a corresponding reduction in their research and traditional teaching loads.

The other matter to be looked at is the problem of calculating the costs of part-time students in the recurrent grant. At the moment it is assumed that the costs of short courses are covered by fee income but that expenditure on other part-time students is calculated in terms of full-time student equivalents.

The DES considers that the effect of Government constraints on new buildings should not be seen as a deterrent. It suggests intensifying the use of existing accommodation by holding courses outside normal working hours or even at the workplace. It also suggests renting extra accommodation at the client's expense.

The courses themselves should be flexible and designed to avoid lengthy periods of release from work, the document says. Many courses could be offered as separate modules, either by developing new ones or tapping into full-time courses. Even master degrees could be provided through a succession of coordinated short courses.

They should also take account of previous in-house training and work experience.

"Institutions should not ignore the extent to which experience gained in employment might be recognized as adequate qualification for entry to courses which would normally require the acquisition of more formal qualifications without any additional foundation or preparatory course", the paper states.

The DES intends to ask the Advisory Committee on the Supply and Education of Teachers to draw up proposals for in-service training of lecturers on refresher courses. It also recognizes the need to keep abreast of developments in industry and recommends short secondments of academic staff to that sector.

"Willingness to acquire the necessary expertise will depend on a continuing awareness among staff that post-experience work is not a sideline but an integral and important part of their work," the document says.

In order to help collaboration between institutions and employers, the paper also promotes machinery to co-ordinate local, regional and national demand for short courses and a national information service for clients.

Copies of the document are being distributed to local education authorities, educational institutions, research councils, professional organizations, industrial training boards and validating and standing boards.

Comments on the proposals should be sent before the end of the year to Mr. W. A. Smyth, Department of Education and Science, Room 5/25, Elizabeth House, York Road, London SE1 7PH.

● *Continuing education: post-experience vocational provision for those in employment* is available from the publications despatch Centre, Department of Education and Science, Honeypot Lane, Canons Park, Stanmore, Middlesex HA7 1AZ.

. . . and the report that never reached anyone

The Government's modest proposals to help universities and colleges mount short mid-career courses, published last week and examined above, will not send the adult education world into paroxysms of delight. Yet the proposals flow directly from the dramatic planning exercise launched in 1978 by the Labour government, which produced the notion called "Model E" and convinced many champions of continuing education that the millennium was finally around the corner.

Model E was the fifth of a series of options which DES planners said the higher education system would have to choose from in the 1980s and 1990s. In those years, the department thought, student numbers would rapidly expand, and then drop away, leaving a large and uneconomic surplus of lecturers and buildings with nothing to do.

Other models included holding the "bulge" of students in the 1980s out of higher education, so that no contraction would be necessary when applications slumped in the 1990s, or teaching the bulge students on the cheap without increasing the size and cost of universities and colleges.

Neither option seemed particularly alluring, and responses to the Government's discussion paper, *Higher Education into the 1990s*, favoured Model E, a course of action which promised to solve the problem of surplus capacity and reform higher education to bring in students from new social groups and of different ages.

What Model E proposed was that resources "released" as numbers fell below the system's capacity in the 1990s would remain available for higher education and be used to accommodate more working class school-leavers, mature people and men and women in work—in other words, people who in the past have benefitted little from traditional higher education courses.

The idea caused great excitement. It appeared to solve at a stroke the financial planning problems faced by the DES and open the way to a new and comprehensive higher education system which would no longer be devoted almost exclusively to the education of a small group of middle class adolescents.

In May last year, however, Tory ministers swept into the DES with instructions to make cuts. In the new political climate, Model E and its "expansionist" fervour quickly withered. Dr Rhodes Boyson, the under secretary for higher education, never allowed the DES to continue its public planning exercise for the 1990s.

Publicly, the short and happy life of Model E ended there. But in private, it quietly continued. A civil service team, which had been set up to take a hardheaded look at how the airy notions of Model E could be put into practice, was allowed to finish its work. Creation of the team was never announced and its report never published. *The THES* has however obtained a copy.

The team was named the Model E Reconnaissance Group and consisted of officers drawn from the DES, the Department of Industry, the Department of Employment, the University Grants Committee and the local authorities. As officials, they were interested in the practicalities, the nuts-and-bolts of Model E, rather than the educational theories. And one of the first things their report does is dismiss one of the Model's major aspirations—increasing the number of working class school leavers in higher education.

"We think a distinction must be drawn between increasing participation in higher education by working class school leavers and extending the opportunities for mature students whether they seek initial courses or continuing education", the report says.

"Research suggests that the differential participation in higher education as between different social classes reflects decisions taken before the age of 18 and particularly 16, when decisions are made whether or not to stay at school.

"It is difficult to see how the higher education service, as such, can do more than play a partial role in reducing this differential. Many of the problems appear to arise in the home and the school and (apart from noting the present position as regards working class participation) we have not therefore sought to pursue them in this report."

The reconnaissance group's report also contains a summary of responses to the 1990s discussion document. The responses were to have been published by the DES as the next stage of its "great debate" on higher education, but publication was halted by Dr Boyson. In its summary, the group criticizes the vagueness of many of the replies the department received.

"The concept of Model E was universally welcomed, and respondents frequently commented that developments along these lines ought to be pursued in any case, whether or not there was a prospect of spare capacity in the present system.

"However, in all the enthusiasm there was scant acknowledgment of the discussion document's warning that such developments would involve substantial changes of far-reaching social importance, and very few respondents made any reference to the key question of resources or to the practical problems of actually implementing developments associated with Model E."

Few respondents, apparently, expected it would be possible to attract more working-class 18-year-olds to higher education, and most thought the best chance for broadening the social range lay with the 21 to 25 age-group—young people who had entered employment or training and who had later recognized their own potential for degree study.

Responses were less uniform on the question of attracting mature students. Some universities, the group reports, clearly anticipated continuing demand from young students on the traditional pattern to absolve them from the the need to change. Others—including some universities—were eager to attract older students, though concerned about the maintenance of standards.

Few respondents paid much attention to fees, and none discussed the case for their abolition. The reconnaissance group itself, on the other hand, believes fee policy could provide a powerful lever to change the direction of the higher education system.

In a special appendix, the group discusses ways in which discriminatory fees could be used to attract particular types of student into universities and colleges. It says fees could vary by age, with over-40s being charged less, or by educational qualification—so that those who are "taking a second bite of the cherry" could be charged more.

Another way of varying fees could be based on the nature of the courses taken. The report says: "In principle, at least, differential fees could be used to encourage or even discourage students into or away from different areas of study where manpower shortages or surpluses were forecast.

"Similarly, in principle, fees could be used to encourage or discourage students at different levels of study. But it is by no means clear that fees differentials for this purpose would be either practicable nor the most efficacious way of achieving such an objective."

Fees could also discriminate between vocational and non-vocational courses "even though there would inevitably be some vocational students on non-vocational courses and vice versa".

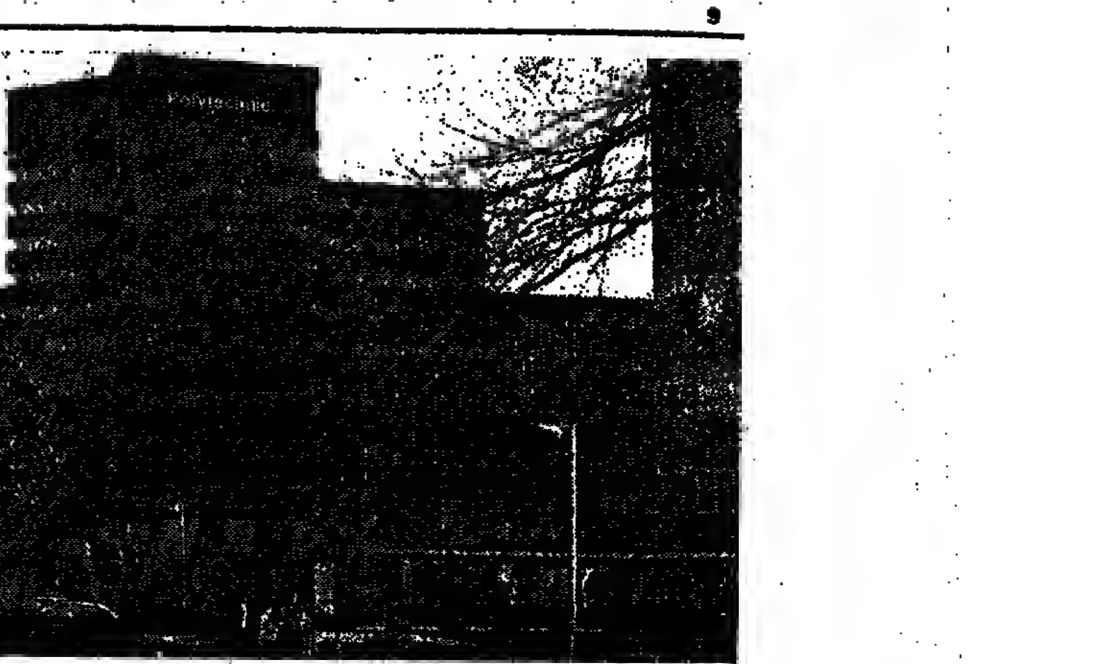
Fees, however, are only one detailed question considered in the reconnaissance group's report. It is more than 80 pages long and concludes with an intimidating list of 28 tasks which the Government would need to examine if it were ever to pursue a Model E-style policy for higher education.

As a programme for further debate and study, the reconnaissance group's report shows that the continuing education millenium is feasible, but would require enormous changes in the detail of educational administration as well as a transformation in wider educational attitudes.

But if it remains unpublished and unused, it will merely be an ideal intriguing epitaph for an idea which briefly fired the imagination of many in higher education, but withered and died in the cold blast of economic recession.

How a polytechnic's image crumbled

Paul Flather on the background to the strained relationship between Huddersfield Polytechnic and Kirklees Metropolitan Council



Mr Durrands (above) and Mr Mernagh have been closely concerned in the polytechnic's running.

Huddersfield is a tough Yorkshire town, for centuries a major centre of the textile industry. Textile production is now in decline, but the town retains a sense of pride in its roots and a home-grown philosophy of self-help and independence. It is even described as the "town that bought itself", a reference to the old borough council's purchase of 4,300 acres including the town centre, from a landowner in 1920.

In Huddersfield the guidelines for the government of polytechnics, those far-reaching but somewhat vague statements now appear to be receiving their sternest test yet. Certainly the public row between Huddersfield Polytechnic and Kirklees Metropolitan Council, a row which at times has bordered almost on warfare, is being closely scrutinized by all those connected with polytechnic life.

Huddersfield Polytechnic was created in 1970 from the former college of technology and the Oastler College of Education; four years later the Huddersfield College of Education was added. Mr Kenneth Durrands, then working in the engineering industry, was appointed rector, and the polytechnic, under the control of the old town borough council, set about promoting its image as an institution of national standing.

Expansion was rapid, culminating in 1977 with the opening of a magnificent central services building. The building has quickly become a landmark, so much so that the council uses a picture of it on the front of its civic leaflets. The polytechnic now has some 3,300 full time, and 2,500 part-time students.

But by the time the new building was opened, councillors were beginning to grumble openly that the polytechnic seemed to run its affairs under a different set of financial rules to those used by other local authority concerns, and as money became shorter, so pressure to "rein in" the polytechnic grew.

Kirklees had already set in motion a painstaking audit at the polytechnic, carried out by chief finance officer, Mr Peter Sharman, when the council suddenly found itself facing an extra bill because of the ill-fated Shiraz project.

This involved setting up a special course on behalf of the former Iranian government to train engineering students. Although it was understood that the Iranians would pay full-cost fees, Kirklees found itself underwriting costs of nearly £200,000 because the course was not "poolable" and eventually footing a bill of £47,000 plus the estimated loss on the course of £78,000.

Councillors say now that they made strenuous efforts to dissuade the rector from going ahead with the course. Mr Durrands says he received no such advice and stands by the project. The governing council said the project, although unsuccessful, was not done with any improper motives.

The fall-out from the course turned the question of "polytechnic spending" into a local political issue. The idea that ratepayers were paying for the education of Iranians won the polytechnic few friends and the affair came to light soon after the Iranian revolution.

When the audit report was leaked after 18 months of preparation, the *Huddersfield Examiner* ran a two-page report. The council set up a five-man working party, including the leaders of all three political parties, and called for blood because of the allegations of financial maladministration by academic staff detailed in the audit. The governing council immediately passed a vote of complete confidence in the rector and his staff, questioned the professional standing of the report, and denied or played down the bulk of the allegations.

A second audit report, apparently confirming and extending the allegations of maladministration is on the desk of council officers. But since last January the positions of Kirklees and the polytechnic have not changed much.

The effect of the audit was to polarize relations which had been growing sour anyway and to mask perhaps the more serious crisis of under-funding caused largely by the arbitrary nature of the capping of the AFE pool last year. This crisis almost led the Council for National Academic Awards to suspend enrolments of all first-year students for the current academic year.

The allegations in the audit report and the resource difficulties of the polytechnic are two separate issues, but they are connected because ill-feeling caused by the former has greatly exacerbated the latter.

Special local factors combined to cause such sour relations at Huddersfield. The first cited by the polytechnic is local government reorganization which in 1974 turned the old town borough council, a friend of the polytechnic, into Kirklees Metropolitan Council. Councillor John Mernagh, chairman of the governing council and of the education committee, and a polytechnic governor since it was founded, says the authority has always kept a tight hold on the polytechnic spending.

A second factor has certainly been the growth of the polytechnic at a pace too fast for administrative procedures. A third factor is that the polytechnic has failed to sell itself to the town.

A fourth factor has been difficult personal relations.

The notes for guidance on the government of polytechnics left an onus on informal contact. The notes, issued by the Department of Education in 1968 fudged the critical issue of how much control local education authorities should have. Paragraph 6 says l.e.a.s should settle the "broad range of courses", that "important responsibilities" must be discharged, and that polytechnics must be subject to controls in "financial, and administrative matters such as the approval of estimates, capital development and the level of fees". At the same time polytechnics should be "given all possible freedom in managing themselves".

The question left unanswered was just how much control the authority was to exercise through its minority representation on the governing council. In theory the l.e.a. had very drastic powers at its disposal; the power to approve or disapprove estimates and the power to select items of expenditure for attention.

The issue is accountability. As Mr Mernagh puts it: "It is a question of a local authority carrying out its proper function as far as spending is concerned. The audit report shows standards are less than are desired. They are slack about their procedures and we want a review." He added that the polytechnic could not expect to escape the ill-wind of cuts.

Confidential letters and documents show how the crisis grew steadily, particularly after the CNAA became involved following review visits of the music and mechanical engineering degrees. On July 1 the CNAA wrote to Mr Durrands setting out five conditions for re-approval of the Music BA Honours degree. At the end of the month the CNAA wrote to Kirklees stressing the need for more funds for "a major national institution of higher education".

By August 29 the CNAA were writing that in a situation described as "getting by" it would be irresponsible to start any new courses, and strongly advising the polytechnic to drop all idea of expansion. After intense discussions between CNAA, polytechnic and Kirklees involving the switching of funds totalling £481,000 the CNAA felt able to lift the threat on enrolments. The CNAA found itself acting as a mediator between the two sides, a job that in theory goes beyond its Royal Charter responsibilities.

The CNAA is to discuss Huddersfield at a meeting of the Committee for Institutions next month and could decide to bring forward the next quinquennial review scheduled for mid-1982.

Resolution of the conflict could take a number of courses. The DES has already declined invitations to step in. Sir Frank Layfield who is expected to carry out an investigation of the audit reports could emerge as a mediator, as could Mr. Eric Dixon, the chief executive of Kirklees, who was in Zimbabwe on official duty when the row blew up earlier this year. The CNAA may be recalled. More drastic solutions would be a change of some of the faces involved, or an acceptance of greater l.e.a. say in polytechnic affairs.

Law diploma put on the stand

Olga Wojtas puts the cases for and against the first major innovation in Scotland's legal education for 20 years

The legal profession is noted for its conservatism. The University Grants Committee is not at present noted for its generosity. Nevertheless, this session sees the inception of a postgraduate law diploma which will be a prerequisite for anyone wishing to practise law in Scotland.

This is the first major innovation in legal education for 20 years. Virtually every Scottish lawyer is university trained. Traditionally, an MA degree was followed by a part-time law degree concurrent with an apprenticeship in a law firm. In 1961, this was replaced by a full-time law degree followed by an apprenticeship.

"The universities and the profession thought the changes had been worthwhile, as they generally meant higher standards", says Professor Philip Love of Aberdeen's law faculty, and vice-president of the Law Society of Scotland. "But since then, the law has expanded rapidly, with new fields developing in employment law, consumer law, EEC law. Lawyers have to know more law, and more complex law."

In England, universities do not [illegible] the main teach the practical aspects of law, and prospective lawyers qualify through a separate college. The smaller numbers in Scotland could not justify a similar institution.

Hence Scottish law faculties fulfil a dual function: they provide an intellectual discipline and training in legal method, and also teach professionally orientated subjects. The expansion of traditional subjects and the arrival of new ones has led to a greatly overloaded curriculum which has proved increasingly difficult to contain in a three year [illegible]

[illegible] all is not well with the apprenticeship system. "Under the [illegible] system, the 'apprentice' was taken under the wing of an experienced practitioner", says Professor Love. "But the sheer size of many firms has resulted in specialization and the apprentice may get to know nothing at all about other areas of law. More often than not, solicitors are so busy they don't have time to train people."

Worried by the unevenness of training, the Joint Standing Committee on Legal Education, which comprises representatives of the universities, the Law Society and the Faculty of Advocates, issued a memo in 1974, suggesting a schema largely the one just implemented.

The suggestions were based to a great extent on the Ormrod Report in England and Wales, not yet accepted south of the border, which recommended a more unified training of solicitors and barristers with an academic stage in a higher education institution, a professional stage at college, and continuing education.

The committee decided the degree curriculum should be restricted to the less technical areas of the law, with the more practical subjects taught in a full time one year postgraduate course, with the emphasis on training by simulation.

Professor Love, convener of the committee, firmly backed by the Scottish principals, began lobbying the UGC for finance. In 1978, the UGC announced in an inconspicious appendix that it had taken plans for the diploma into account when fixing recurrent grants.

"The diploma got through by the skin of its teeth", says Professor A. W. Bradley, Edinburgh's dean of law. "The policy decision was taken by the UGC just before the savings began—if we'd been a year later, I don't believe we'd have got it."

The diploma is now under way. Four obligatory courses have been transferred from the law degree: accountancy, conveyancing, procedure and pleading, and applied tax law. Legal practitioners are teaching seven new practical subjects which include advocacy and pleading, management of companies and public administration.

"This is a year of concentrated study under the guidance of the very best practitioners", says Professor Love. "Despite fears from some people, we've had no real problem recruiting tutors."

The diploma will be tested through a combination of continuous assessment and open book exams. "It will come as a shock to some students that whereas undergraduates were able to opt out of degree classes, you can't opt out of the diploma which effectively replaces a year of professional training", says Philip Love. "Attendance is essential. It's learning through doing, so you can't miss classes and then go away and mug up."

It would be naive, however, to expect that the diploma has been universally welcomed, although now it is a *fait accompli*, the opposition is more muted. There is a general willingness, even among its opponents, to make it a success. But the pockets of resistance are still there.

"It depends on what you think a university is for", says John Sturrock, senior president of Edinburgh's student association, and former president of the law students' council. "I think it should be for the improvement of mind and ability in a general sense. This is bringing practical professional training into the ivory tower atmosphere. I don't think it's the right place for lawyers to learn about being lawyers."

There is a similar scepticism among many of the profession. "After a year of the diploma, you'll still never have met a client or answered the phone. No way can you teach the practice of law in university surroundings", says one solicitor.

The diploma is not intended as a complete substitute for training in a legal firm, however. Diplomates will still have to train for a further two years, although the antiquated term "apprentice" will be replaced by "trainee". But the diploma will mean an enhanced salary. Apprentices' salaries have always been notoriously low. Now, a diplomate's starting salary will be £3,250, compared with the £2,900 of a second year apprentice.

"If firms pay them more, they're going to get their money's worth out of them and use them for proper work, not making the tea and running errands", says Professor Love.

But while there was a proscribed minimum for apprentices' salaries, the Law Society has dared only to recommend a minimum for trainees. And there have been murmurs of rebellion among law firms. Some say they won't pay it; some even say they won't employ as many trainees in future.

Given this attitude, it is not surprising there have been no moves to implement what everyone agrees would be the best system of training—sandwich courses divided between university and law firms. Firms have got used to their full-time apprentices, and no money would be forthcoming from the Scottish Education Department for block release professional training.

Many people are astounded that the SED should pay for the diploma, a qualification for a private profession. "The profession is abdicating its responsibility for training and putting it on the state", says a solicitor.

One can justify public financing of a more consistent training for lawyers, presuming the public will benefit directly from it.

But the Scottish Legal Action Group, a reformist body consisting mainly of academic and practising lawyers, has severely criticized the diploma for the glaring absence of welfare and social law. In a strongly worded editorial in its journal, *SCOLAG*, it said: "One would think on looking at this law syllabus that the hundreds of thousands of Scots living on state benefits in council houses were modern serfs with no legal personality."

The concept of the diploma is excellent. Apprentices have in the past been left blindly struggling with work they do not understand. Diplomates will be more expert in a broader area than is possible at present.

But if the universities are truly concerned to produce diplomates who can give a better service to the country, they must have the courage to ensure that the curriculum includes more in its 400 hours which is of direct relevance to all sections of the community, including the poorer and weaker, than 10 hours on legal aid.

Difficulties in keeping up the supply of scholars

Growth in the social science professions is over for the time being. And if growth in the number of jobs declines, so the demand for new entrants into the profession falls in absolute terms—and rather steeply. That simple message from elementary economic analysis, received by us at a time of sharp and deep cuts in SSRC's total finances, has led us to signal a retreat on our postgraduate training front.

Of course there are exceptions, and this is not a decision taken lightly. It is the outcome of a realistic appraisal of our present and likely future resources, and perhaps more important, of employment prospects. It is too early to say how far the SSRC's analysis of the situation is shared by other funding agencies and whether they will react in a similar way. SSRC funds only 36 per cent of United Kingdom full-time postgraduates in the social sciences.

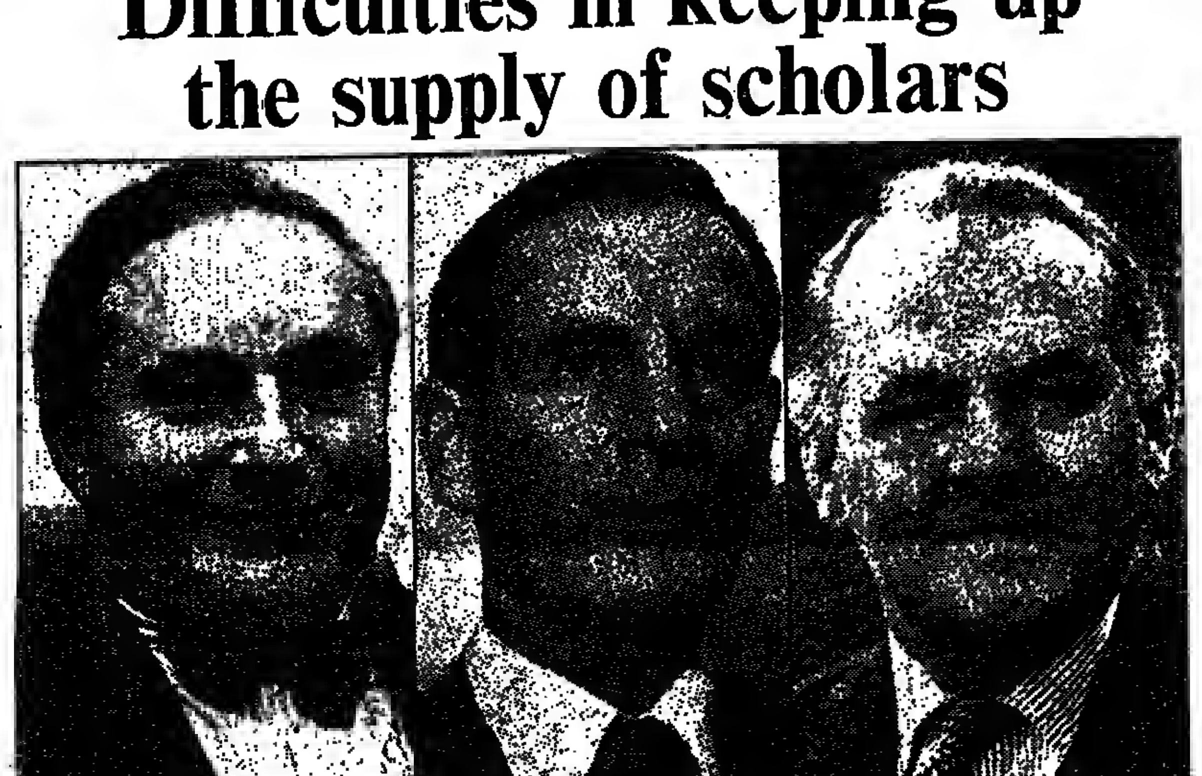
Enough has been said and written about the sudden and late cut in funds received by SSRC in the summer of 1979—a cut which for wholly practical and financial reasons had to be borne largely by postgraduate training. In 1980, after maturer consideration, we reaffirmed the decisions, and indeed had to reinforce them.

We have had to take this further step in part because the cuts of the previous year changed the stock pattern of SSRC studentships and left SSRC with a higher-than-normal proportion of students applying for those "third year extensions", which it has been customary to grant. This year's cuts, however, have been more selective across subjects.

This month the subject committees of SSRC meet for their triennial review of quotas, and will now put forward to the Postgraduate Training Board their bids for the academic year 1981-82. They will be looking forward to future years. What we will be able to finance in the future will depend on the size of our own funds—we have the task of supporting mature research workers through our research board, as well as paying for research students.

We echo the vigorous case for combining research with teaching recently put forward by Sir Rex Richards, the vice-chancellor of Oxford on behalf of the CVCP—more than one of the examples he quotes from the social sciences have in fact been attracting our recent attention. We are a research council, and while graduate students account for nearly half our budget, research must be our main preoccupation, and on that front we are managing to hold the line with no retreat, though the struggle to keep the several segments of the line intact is hard.

There is no shortage of able candidates for studentships in the social sciences. There is no shortage of good departments eager to enrol them. But there is a shortage of funds to support them, and SSRC would be irresponsible if we did not ask ourselves if the students we finance will have jobs to go to when they finish their studies.



Michael Posner (left), Sir Rex Richards and Sir James Dunnett are concerned about shrinking opportunities for postgraduates

Long-term fundamental subjects must not be starved of cash or the roots of progress will die, argues Michael Posner

Inevitably the subjects that appear likely to contribute to the recovery of the national economy, in particular management or educational studies, have an immediate appeal to which we have not been deaf. But longer term fundamental subjects must not be starved, otherwise the roots of further progress will die. SSRC duty, and in particular the duty of its Postgraduate Training Board under the chairmanship of Sir James Dunnett, is to find the point of balance between these necessarily conflicting demands.

But even more important is the way we might adapt our present mode of support. Here the council received a preliminary report from its Postgraduate Training Board in the summer and approved certain priority courses of action. It was agreed to give substantially increased support to linked awards, so that postgraduate training could be associated with participation in directed research projects; together with this, council agreed to establish a new type of research studentship, "Collaborative awards in the social sciences", which will involve cooperation between academic institutions and bodies in the private and public sectors in the training of postgraduates.

We agreed to consider sympathetically the introduction of "student choice" schemes for the allocation of research training awards, if desired by individual subject committees. We decided to retain the quota system of allocation for coursework awards. We agreed to give more emphasis, in determining allocations of awards, to the quality of supervision that research training students might receive.

This last matter is one that has been aired before in these columns; SSRC is aware of its responsibilities. There have been attempts, through the conferences of postgraduate students sponsored by various subject committees over the years, to counter the sense of isolation felt by postgraduates working, perhaps, in large departments under the supervision of established scholars with heavy workloads of teaching and administration, as well as research. We do recognize that there is a problem; and while a funding body has to tread a narrow path between intervention and dissociation from those it supports, financially, we appreciate the need to ensure that supervision is adequate.

In its summer discussions, council also looked forward to the possibility of encouraging new modes of PhD research training that incorporate substantial taught components in a three-year programme. This is not just a defensive response to our discoveries about poor completion rates—it is true that completion rates for taught courses are very much better than for PhDs, but that is only to be expected; the author of a PhD is after all expected to make an original contribution to knowledge.

But any rejigging of the PhD will have to be initiated in individual universities, and while council is keen to encourage experiment and change I have no doubt that long after my tenure of my present office has ended there will be great educational institutions that persist in demanding from successful research students vast erudite treatises in the grand tradition of the *Doctorat d'Etat* or *Habilitation*. Alongside them, I hope there will also be some other types of training that recognize, for instance, the sense of making a distinction between pre-doctoral and post-doctoral research.

Against this background, in making its own plans, each of the subject committees of the SSRC will of course have in the forefront of its mind the well-being of the academic discipline its members profess. That means, for instance trying to ensure that enough postgraduates are being trained to enable them to fill places in the research and teaching staff of that discipline in the future. It means action to encourage those who show an informed interest in parts of the discipline that are exciting current academic interest, or are judged likely to be important in this way in the future.

Vocational requirements are clearly important, and judgment here can be assisted by efforts at predicting future manpower demand (though this is no precise science). But these are not the only measures of usefulness to postgraduate training—it appears, for instance, that a number of research students in economic history have become merchant bankers; we should not seek to "plan" that process.

So we are resistant of any simple-minded or single-valued test of the usefulness of the work we finance. In the same way, we would be right to reject any unique test of success. Nevertheless, completion rates (the number of students who obtain degrees, related to the time it takes them to do so) do constitute one such measure.

SSRC has surveyed the completion rates of PhD and other research training students, and the rates for those who commenced their awards in 1973 are given in table 2(a). A similar survey has been done for students taking advanced courses terminating in 1978; the results are given in table 2(b). By any standard the 80 per cent coursework completion figure is pretty good; but does such a judgment necessarily lead to the conclusion that the 40 per cent figure for PhDs is pretty bad? Our answer is not bad, but not good enough. There are other tests to apply, but this one means something; and its meaning is not satisfactory.

My personal interpretation of these figures (which I must refer to our statistics committee for the necessary harsh professional criticism) is that after n years (where n may be as large as 10) some 25 per cent of any particular annual cohort of would-be PhDs will have withdrawn; and the other 75 per cent will have been "successful" after on *average* time taken of about six years. If this guess is correct, it is not a disgrace, is probably not far off what is true of the humanities or from current practice in continental Europe, but in my view it is not quite what was intended by those who presided over the large increase in postgraduate training in the 1970s, nor is it the sort of statistical outcome that would have been expected by most of today's professors if they had been asked to predict the outcome of our survey.

It would however be erroneous to describe the non-completers in this survey as failures. These were the years of high demand for social scientists, and it is understandable that when students had completed their three years of full-time funding, they would have moved into full-time employment; their subsequent work on their theses would be spare time. The peak years for completion by 1973 starters were the fourth, fifth and sixth years (the greatest number in the fourth year).

There is another measure of success in academic work: publication. In three subjects, studies have been made of the contribution by postgraduate students in the form of books or articles in learned journals.

The geography study was based on the Annual Register of Theses which is compiled (with modest support from SSRC) by heads of geography departments, and extracted references to all apparent home students completing theses in 1970-78. There were 715 of them and it is clear that those in later years have not yet had time to publish. Nevertheless, out of 836 articles in the journals, 216 were products of postgraduate work, and 48 were jointly produced, one of the authors having written on the basis of his postgraduate work.

This evidence suggests that at least one-third of all the papers published in the geography journals are the product of postgraduate research.

In political science, the source was the *Aslib* index to theses, checked against the British National Bibliography and the catalogue of the British Library of Political and Economic Science, and relevant journals for the period 1974-79. Of the 285 students identified, 54 eventually published books, and it is estimated that 83 of the 688 journal articles in the period are apparently derived from theses.

The report by Professor Atkinson on economics students has a wider scope. Its basis is a study of the 213 students who commenced research training in economics between 1970 and 1975. Of these 38 published books, and 72 had published articles or chapters of books. It is particularly interesting that, of these, 12 of the authors of books and 31 of the authors of articles had not yet completed their theses. This is strong evidence to support the argument that completion is far from being the sole measure, or even an adequate measure, of the "success" of postgraduate training.

These investigations provide valuable insights into the nature of postgraduate work. Their importance should be considerable and should not be judged by the ephemeral test of contributing to a brief for the defence in some sterile controversy about completion rates. But we have to recognise that, just as there is nothing transcendentally wonderful about a PhD degree certificate, in the same way, it would be foolish to suggest that journal articles themselves constitute some eternal good.

The purposes of postgraduate training, and the way the success of that training should be judged, raise far broader questions, some of which we may hope will be illuminated when the Swinnerton-Dyer working party reports to the Advisory Board for the Research Councils. Meanwhile my council will continue to do the best it can within its limited means to help replenish the stock of scholars and at the same time provide for perceived manpower needs in the many lines of activity for which it has some responsibility.

The author is chairman of the Social Science Research Council.

	1978/79	original 1979/80	cut 1979/80	projected 1980/81
Studentships				
Area Studies	48	45	34	27
Computing	15	11	8	8
Economic and Social History	106	96	73	58
Economics	208	198	151	143
Education	105	102	78	82
Geography	90	85	85	53
Management	278	253	192	214
Multidisciplinary	7	4	4	8
Planning	232	219	186	163
Political Science	187	155	117	98
Psychology	115	100	78	59
Social Anthropology	58	53	40	30
Socio-Legal	30	28	20	18
Sociology	178	173	132	108
Statistics	37	37	28	25
Sub total	1,672	1,557	1,184	1,090
Initial Pool Competition Reserve	103	82		
Third Years Reserve	272	300	300	410
Total Studentships	2,047	1,939	1,484	1,600
Bursaries	272	260	184	200
Fellowships	3	1	1	—

Table 1: Allocations of new SSRC postgraduate training awards by subject. N.B. These figures refer to new entrants; for purposes of comparison, SSRC has on its books in October 1980 a total stock of about 2,300 students.

Degree	Obtained degree No.	%	Still registered No.	%	Failed/withdrawn No.	%	Total No.
Doctorates	181	40	177	39	91	20	449
Other	83	39	45	21	83	39	211

Table 2a: Completion rates of research training students who commenced SSRC Studentships in 1973.

Obtained degree No.	%	Still registered No.	%	Failed/withdrawn No.	%	Total No.
600	84	67	8	61	8	727

Table 2b: Completion rates of coursework students who commenced SSRC Studentships in 1976/1977.

Black man's burden—white man's legacy

Richard Rathbone analyses the making of modern Africa's economies. He warns that the attractive theory of colonial 'blame' only tells half the story.

The term "legacy" perpetuates the uncomfortable paternalism that in many ways characterises the formal and informal relationship of Europe with Africa. A legacy is a gift from beyond the grave and whether it is welcome or unwelcome, the recipient has usually played little part in its accumulation other than perhaps by being polite to a tiresome aunt. What Africa is today is much more than a surviving relative in possession of a heap of bric-a-brac, or even a crippling burden of debts handed on by one who has died. I have entitled this lecture *The Legacy of Empire*. This presupposes that one can neatly excise some discrete portions of present day reality which can be attributed to the 80 or so years of the colonial period and label them, as in an autopsy, as alien introductions.

These distinctions are not at all clear cut; Africa today is the product of a long dialectic between those aspects of her own, native cosmologies, economies, societies, polities and cultures and those of others which have come, in one way or another, from outside. These external forces, which are part and parcel of the development of all but the rarest of isolated communities, are not merely European forces.

By contrasting Europe with Africa we are in danger of reifying in the latter something that is to a large extent a geographical expression. Africa to be sure figured on one page of our school atlases but it is an immense continent, peopled by an immensely varied set of societies with individual and frequently contrasting histories. The Africa that Europe encountered in the mid-nineteenth century was already the product of aeons of [illegible] development as distinct African group interacted with distinct African group. It was moreover an Africa whose major extra-continental influences were those of the Islamic Mediterranean, influences which in no manner ceased with European annexation. Africa was then, and never has been, a [illegible] universe peopled by identical people with identical historical experiences. Secondly, despite the [illegible] of racist ignorance which [illegible] some otherwise reputable [illegible], African societies, like [illegible] groups, inhabited a world [illegible] they played a full part in [illegible] constantly, not always in [illegible] which they wished. African [illegible] is replete with all the [illegible] of any other corpus of historical experience. That dynamic [illegible] stop in its tracks the [illegible] that tricolours or Union [illegible] were run up colonial flag-[illegible]. On the contrary, the colonial [illegible] can only be sensitively seen [illegible] process of interaction, even if [illegible] one of the parties was far [illegible] materially advantaged than [illegible] others. It goes without saying [illegible] European intervention in [illegible] altered the course of the [illegible] of Africa [illegible] set of directions [illegible] we can only guess at. But [illegible] itself directed the shape of [illegible] of European activity on that [illegible]; what happened, then, [illegible] constituted the period of [illegible] rule was not what either [illegible] actors quite wanted. Like all [illegible] of history, it was a complex [illegible] variables interacting upon [illegible] other.

Thinking about what the present-day implications of that period of history are for Africa we run headlong into the eye of an historical storm. That storm is a value-laden affair; to caricature it there are those who argue that Africa might have avoided the depth of poverty that much of it suffers from today had there been no colonial period, had such a period been characterized by a less predatory approach by Europeans and so forth. Far to the right of that unprovable argument is an equally untestable set of propositions, namely that Africa benefitted from this interaction. Not merely in the interests of peace I think I steer a middle course. In the first place I regard Africa as only one of the many areas touched and then transformed by the gradual expansion of what Wallerstein has chosen to call the "modern world system".

Because of the happenchance conjuncture of a huge range of variables from birth-rates to climate, Northern Europe was the site of the Industrial Revolution which gave a

[redacted]

new material edge to the much longer term expansion of European merchant capital from the fifteenth century onwards. From the fifteenth century onwards Africa had been part of that interaction and to be sure much of it has a very negative ring. The drawing in of Africa into the Atlantic economy saw probably the largest movement of population in history before the nineteenth century and the circumstances of the enslavement of African peoples is rightly seen as a moral and material disaster. But the process, brutal in all its aspects, did not destroy even the parts of Africa it touched most deeply. The remarkable capacity of man to adopt and to adapt is visible in the way in which Africa kept Europe at a distance. In West Africa, in particular, Africans moved in to dominate the parallel legitimate trade. All the contemporary sources refer to the sophistication of African production and entrepreneurship.

In this period of merchant capital expanding we can perhaps talk about imperialism and see it usefully separated from colonialism with which it is frequently conceptually confused. Africa suffered from, and in some cases profited from this expansion as other parts of the pre-industrial world did. Although historians loathe the concept of inevitability I personally see this expansion as an inevitable one. In no part of that pre-industrial world was there anything like a successful resistance to this slow process. And although much of that non-European world was never to become formally colonised, a great deal of it today can be characterised in terms of limited export dominated economies, huge gulfs between the poor and rich and so forth in ways we associate with that most colonised of continents, namely Africa.

The development in Europe of new ways of making things, and then selling them and the implications these had for the way that society was organized spread in its revolutionary, destructive and constructive fashion throughout the world and for many aspects of modern African history we do not need to over-emphasize the role of colonialism.

Colonialism when it emerged most forcefully in that still contentious process we call the Scramble for Africa was initially, I believe, conceived of by the Powers as a mode of organizing the commercial, technological and industrial thrust into Africa. It was designed to provide for national monopolies in the markets for African produce and to reduce competition in what Africans would be bound to buy in return. Being thus largely managerial in conception, colonialism alone is neither a sufficient nor a necessary condition in describing Africa's transformations of the past 100 years or so.

I argue this not least because the ground-work, so to speak, of some of that transformation pre-dates colonialism by many decades. And that in turn of course conditioned the nature of colonialism as it unfolded. For example, the 400 years or so of contact West African coastal peoples had had with the Atlantic economy which was not solely a slave trade presented Europeans at the period of the Scramble with a set of societies very far from the Rider Haggard stereotypes. Such peoples, to some extent Christianized, literate at the level of the elite, active in commerce, much travelled and knowledgeable about the interior were to prove powerful competitors to the European commercial firms seeking to exploit the African market. Similarly their ranks provided the earliest professionally trained doctors, dentists, lawyers, clerics and schoolteachers. Indeed their skills could be outflanked by competing Europeans only by the latter's use of the state, the colonial state, to discriminate against Africans in public and private office, in credit allocation by the European banks and so on.

It is from their ranks again that the earliest organized protest against the manifest partiality of colonial rule comes. And this protest was powerful enough, from the early days of colonial rule and not merely from the zenith of mass nationalism in the mid-1940s, to limit the ambitions of colonial policy. Moreover, the skills not merely of this intelligentsia but also of many rural producers who had been supplying the market with dye woods, hard woods, palm oil and other goods gave the colonial authorities the option of leaving economic expansion in the hands of an active and responsive peasantry. Thus the distinctive nature of British colonialism in West Africa, so very different from the pattern to be found in central Africa or Kenya, for example, owed more to developments in African society, which in turn owed very little to colonialism as such and which had been, so to speak, in the pipeline for several generations.

It is uncontentious to say that the high expectations of ready profit and instant wealth which so excited some of the most ambitious imperialists of the late nineteenth century were soon dashed. In West African enterprise it is becoming clear that more traders went bankrupt than prospered. In other parts of Africa the assumption of the natural incentive of the market so beloved of Professor Friedmann proved a false assumption.

African economies and politics had a strength, resilience and capacity to deal with merchant capital on its own terms. With well-organized rural bases Africans as consumers and producers could choose who they bought from and sold to, and could direct the periodicity of that choice. One of the prime targets of colonial intervention was that choice. African intercourse with European factors needed, colonialists argued, regularizing. In many ways this was a decisive step. By putting ring-fences around spheres of influence, as it were, African trading options were indeed limited. The end of the free market undoubtedly disadvantaged Africans. It ushered in a long period in which European goods were proffered at prices untrimmed by the razor of competition. Because of the intervention of a variety of European goods some aspects of the traditional craft sector were eclipsed. Birmingham-made steel matchets were cheaper for cutting down bush than those made by the smith. Paraffin lamps were better for lighting huts in the long equatorial night than rush-lights and matches were better for lighting them. The gradual diversion of specialist food producers into production of cash rather than food crops introduced European food and drink importation not as luxuries but as necessities. Holland's gin and sardines to some extent replaced distilled palm wine and

[redacted]

tilapia. These needed to be bought not by older systems of exchange but by cash transactions. To acquire imported goods Africans needed to earn cash.

That incentive was enough to push many into the production of some of the major crops that come to mind when we think of Africa: cocoa, palm oil, ground-nuts, pyrethrum, rubber, timber and cotton. But it was, for the hungry European merchants, an insufficiently rigorous goad. Colonial rule intervened in this for two reasons. Firstly it was of course sensitive to the proddings of commercial lobbies who sought to maximize their roles as sellers and buyers. But probably more importantly colonial rule itself had to be paid for. Despite the jingoism of those wonderful bound volumes of the *Boys Own Paper* it is the case that colonialism was popular in the great metropoles only so long as it cost nothing. If the British and French taxpayers were to be protected from the demands of colonial expenditure, such colonial revenue had to be met locally. And it became a principle of all colonial regimes that colonial states could enjoy the services, benign and malignant, that they alone financed. Thus tax was levied on the exportation and importation of goods to Africa and importantly tax was levied, in cash, upon Africans themselves.

The option of producing for the market, or selling your labour was no longer an option. Money had to be earned to pay tax, a tax which, inter alia, paid for the enforcement of tax collection. Colonial states themselves had the incentive for such action irrespective of the nudging of Chambers of Commerce. Their own maintenance depended not only upon the direct returns from taxing Africans but also upon an expansion of African production of cash crops and minerals for only thus would excise revenue emerge.

The impact of this was as uneven as the wealth of Africa was uneven. Some societies, already organized along capitalist farming lines, enjoying good soils and decent communications baulked at the cull on their earnings, as we all do; but survived. Whether they did so unscathed is another matter. The possibilities of accumulation were promptly acted upon even before colonialism by those with the power to accumulate. Taking advantage of market opportunity, those very often with what Max Weber called the "monopoly of coercive resources" maximized their wealth by more repressive subordination of those less well-endowed. The process of stratification, which was not of course alien to pre-European Africa, was undoubtedly reinforced, and accelerated throughout the period of the New Imperialism and its hand-maid, colonialism. Just as European peasantries lost their rights to common land, and pannage and annual holidays so too did the lower ranks of African society lose the local equivalents.

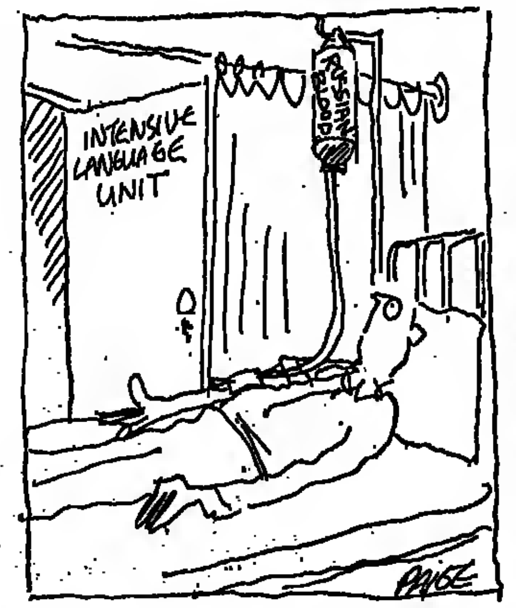
Land, once the right of all kinsfolk, acquired commercial value and was sold to people outside the kin-group for example. The slow and cruel process of rural proletarianization is the other side of the coin of the creation of a rich farmer. The presence of a taxation system had a powerfully monetising effect upon human relations. The colonial state moreover, in most parts of Africa reinforced harder class differentials in Africa.

It supported the successful, for these were the essential producers of taxable exports and contributors to sterling balances. They were the innovators to whom were extended the limited amount of rural development assistance—new fertilisers, seeds, irrigation methods. The rich farmers became the rural creditors of the transformed countryside lending against pledged smallholdings in times of trouble. Many major land consolidations were in fact achieved between 1929 and 1935 when small farmers were foreclosed upon. Thus when we talk of the "survival" of areas in which factor endowment was at least reasonable we are talking about rapidly changing societies in which

continued on page 12

Russian and nothing but Russian

Tony Briggs on a saturation programme in language teaching



One of the attractions of teaching and studying modern languages at university is the challenging need to perfect two different skills. A balance has to be preserved between the study of the foreign language itself on the one hand and, on the other, the culture (usually the literature) of the country in which it is spoken.

In traditional language departments these two aspects are accorded roughly equal attention and most teachers enjoy working in both fields. The intention of such a programme is to produce sound linguists who are also cultivated young people fresh from exposure to profound ideas and exciting aesthetic experiences.

For students with little interest in literature there exist some departments specialising almost exclusively in the language itself. Those in the traditional departments, however, often experience a grumbling sense of disquiet and disappointment as they become aware that their post-A level language skills are developing very slowly, remaining static or in some cases even declining.

The weekly prose or translation class and the hour with a native speaker are all very well but there is little opportunity or incentive to drag one's command of the language from a plateau where it seems to have rested for so long to a proud new height. It is true that many students spend time abroad but this fact scarcely relieves us teachers of the obligation to energise our language instruction in order to satisfy the recipients of it while they are with us. How is it possible to mitigate the fairly widespread feeling of disillusionment without overturning the whole tradition of teaching language and literature to which we have justifiably become accustomed?

In the Russian department at Bristol University we have conducted an experiment in intensified language teaching which has produced gratifying results and might suggest a solution to this problem applicable on a much wider scale. The idea was to devote just one of the 25 effective teaching weeks in a session to a saturation course of language instruction.

All non-language work was to be suspended and a continuous programme of translation, conversation and other Russian language classes would be offered instead. The students were consulted in advance and accepted the scheme with much enthusiasm. It went ahead three years ago, in the sixth week of the second term.

One important rule was to avoid offending other departments which were not consulted at the earliest stage and so all our students were instructed to honour commitments to other subjects. Most of them had a joint or subsidiary foot in another language which meant that they were unavailable to us for a small number of hours during the week (in most cases four or six). With these exceptions they were invited on a voluntary basis to attend all other possible language classes.

In the first year of the experiment most of the hard work was done in the mornings. There were four sessions broadly arranged as follows: 1. English-Russian extempore translation (sometimes written, sometimes oral). 2. Conversation on prepared topics with the native speaker. 3. Russian-English extempore translation (written and oral). 4. Advanced work on Russian syntax, idiom and vocabulary. The extempore classes sometimes developed into exercises in the art of interpreting. After lunch there were no practical classes but an opportunity for passive involvement in the language was provided by a series of Russian films and talks presented to the whole department.

Monday afternoon was free. Wednesday afternoon was given over to a guest speaker (on a language topic) from another university. On Friday afternoon a written examination was held, consisting of three papers including one based exclusively on work known to have been covered during the week.

At the end of the first experimental week it was important for us to discover what the students had thought of our programme. They were asked to complete a questionnaire on the final day and the responses were carefully considered. As things turned out, overwhelming approval of the idea itself was qualified by only one general reservation: the intensive course was not intensive enough —20 classes were insufficient.

Accordingly, the second time round we shortened the breaks between morning classes from 15 to 10 minutes, added an extra class in the afternoon, and did away with the films and the free afternoon replacing them with even more language work. Thus the total number of classes was raised to about 30.

This time at the end of the week there were no complaints about under-intensiveness though we did receive other suggestions: that more classes should be conducted totally in Russian, that interpreting skills should be further developed, that certain specific areas of practice (such as the exercising of numbers which always present difficulties of rapid comprehension and reproduction in a foreign tongue) might be given greater emphasis. Attempts were made to incorporate these ideas into the third intensive language week held in February, 1980.

The results of three questionnaires taken together were of particular interest. In the first place a commanding majority of all students claim to have attended all, or nearly all, the classes available. Second, although the range of skills being practised and tested answered the general need almost everyone wanted even more chance to speak and hear the language rather than study it in theory or through translation.

The concluding examination, which was never considered by many students to be "essential" but was once thought to be "useful" (as an incentive to revise work covered during the week), has now declined in popularity to an extent where the majority deem it "dispensable". It will now be done away with.

The most significant result of all concerns the voting for or against repeating the course each session. Here we have run into the kind of unanimity normally confined to election results in a totalitarian society. Not a single student, in any of the three years, has voted for its discontinuation. Wry humour and genuine exhaustion abound among staff and students alike but the enthusiastic support for this kind of innovation in university teaching has been established beyond any doubt.

Students are not only willing to submit themselves to a period of sustained and rigorous language practice; they are eager to do so. If there is any uncertainty it concerns only the feasibility of introducing the intensive language week once or twice a year. Each year the votes have been split roughly 50-50 between these two options and, although it is my own belief that such a course could usefully be mounted both in the autumn and spring terms, one would require a stronger mandate before making the enormous effort to do so.

Can it be said that Russian is a special case? Certainly this language has its own special difficulty and remains a severe intellectual challenge long after A level. The country where it is spoken is not easy of access. Numbers of students studying Russian remain relatively small though we shall have about 60 to deal with next February and the 30 teaching hours will provide a heavy burden for a teaching staff of three full-time lecturers plus a native speaker and two postgraduate students. Even on this scale before it was done it looked impossible.

Clearly the major benefits of a scheme such as this accrue to small departments and minority languages. (The sad irony of describing the language of Pushkin, Tolstoy and Dostoevsky, spoken at present by nearly 300 million people, should not pass unmarked.) However, my own experience gained as a student of Russian, French and Spanish two decades ago at Cambridge, together with impressions gained more recently from a wide range of students in larger language departments, suggests that the general dissatisfaction with language teaching is a serious matter.

Several students have asked hopefully whether the experimental scheme introduced at Bristol is likely to be incorporated into language work in other departments and at other universities. The answer, of course, lies in other hands. For our own part, we are convinced of the need to revivify language teaching.

Is it an exaggeration to suggest that our failure to do so may be a factor of some significance in the current decline in the popularity of modern languages in general? An occasional intensive language week, devoid of all menace towards the study of literature, may be just what is needed to renew enthusiasm and add excitement to an increasingly flaccid programme of work.

In Moscow recently I have had two opportunities to outline this scheme to an international audience of teachers of Russian language and literature. The degree of identification with the problem was remarkable. One of my warmest sympathizers was a lady lecturer from Ulan Bator, who wanted to receive every last detail and promised to initiate a similar programme in her own institution. If the idea is about to sweep through Outer Mongolia who are we in the United Kingdom to lag behind?

The author is senior lecturer in charge of Russian studies at the University of Bristol.

Black man's burden white man's legacy

from page 11

class and achievement became more important than the older values of kin-ranking and ascription. One could herald this as an opening up of society but in reality it seems to have been a development in which more and more property became bottled up in fewer and fewer hands.

In poorer areas taxation proved onerous in the extreme. French West Africa, which for all its huge physical size was hectare by hectare infinitely poorer than British West Africa, witnessed large-scale migrations into the British-ruled areas both to escape tax but also to earn what was unearnable at home. Rural poverty, exacerbated by taxation policy in many parts of Africa stimulated the creation of a pattern of oscillating migration to centres of employment such as large towns, mining areas and in settler areas, white farms and enterprises. Where labour was more urgently required than revenue, as in South and Central Africa and Kenya, rural poverty was actually connived at by the state.

Where rural self-sufficiency or something close to it existed, the prospects for labour recruiters looking for cheap labour above all were slim. The whole history of land allocation in South Africa, Zimbabwe and Kenya must be seen in that light. An expanding population of Africans was boxed into progressively smaller land areas, cut off from entrepreneurial activity by *dictat*, refused permission to grow certain lucrative crops where such cultivation competed with the less cost-effective European farming sector. This situation of induced proletarianization undoubtedly enriched a very few powerful men in African society—certainly the landlordage of Kenya's Kikuyuland today owe much of their current riches and power to this policy—but the vast majority ceased to be a free peasantry and became a landless working class, dependent upon migrant wages for the bare necessities.

There is no doubt that the wicked caricature of this situation in today's South Africa can be dated not only to the land-reserving Land Act of 1913—which the British Government approved—but to other, earlier, measures designed to sap away at the independence of heretofore self-sufficient and relatively prosperous people. The cliché of the "development of underdevelopment" seems to me to be especially pertinent in these examples. The mere formal termination of colonial rule has had of course little impact upon the cycle of dependence such crippling policy has had. Recent studies of southern Mozambique, for example, show very clearly how rural areas deprived for many years of young adult male labour have declined to the point that almost every homestead is now dependent upon a meagre but necessary migrant worker income.

The case of Lesotho is perhaps as stark. Once the grain basket of the south, the Sotho have been boxed into a highland state in which soil resources have visibly declined because of over-cultivation, in which the typical family is female-headed, desperately poor and where men spend their working lives in the Rand. The standard of the South African publicity machine to the effect that the Republic produces essential labour chances to other, also poverty-stricken, neighbours must be seen in the light of that deliberately created poverty amongst people who were, in the labour recruitor's eyes, and those of the mine magnates, too damned independent. The vast gulf in earnings in Kenya noticed by, for example, the ILO team in the early 1970s is also a contrived situation, a developed situation. Not only were the government appointed chiefs at the colonial period supported in their development of land-lordage but as supporters of the colonial state in the Emergency of the 1950s they were further rewarded in the land-redistribution that was part of the huge population removals of that period.

The vacation of much of the White Highlands following Kenyan independence left the race to the swiftest end to those who had; more was added. It is a bitter irony that the struggle of the landless that erupted in the incoherent and doomed movements we know as Mau Mau and which remains much of the validating ideology of the dominant party in Kenya has yielded to those landless people very little in terms of tangible rewards.

European preferences have to a large extent moulded the present-day states of Africa in the forms we find them today. The widespread dependence on single cash crops or extracted minerals, a dependence so desperately difficult to break away from, can often lie directly soon as a policy consequence. In Central Africa today, Zambia's strategically uncomfortable dependence upon imported food items must be seen in the light of colonial preferences. Expenditure on rural improvement was miniscule throughout the colonial period, subordinate as rural areas were to the demand for cheap labour on the railways and mines of the copper belt. Declining rural areas ensured labour of course but for independent Zambia, the low world prices for copper are not matched by low cost food imports.

Throughout Africa the drawing of food producers from staples into initially better-rewarding exportable items like cocoa or cotton in part explains the expanding percentage of food imports in almost all African budgets. The modern state is caught in an inherited dilemma—debts need servicing in international exchange, plant and capital goods as well as most consumer goods need to be bought in the same coin and thus export crops must continue to be grown. At the same time the relative dearth of skilled manpower and available funds for improving food-growing capacity has a high cost in foreign exchange in terms of food imports. The complete lack of concern with diversification, protection against the decline in value of one staple such as the fall in value of natural fibres which has hit Tanzania so hard, is very much part of colonial economic policy, more I suspect through neglect rather than design.

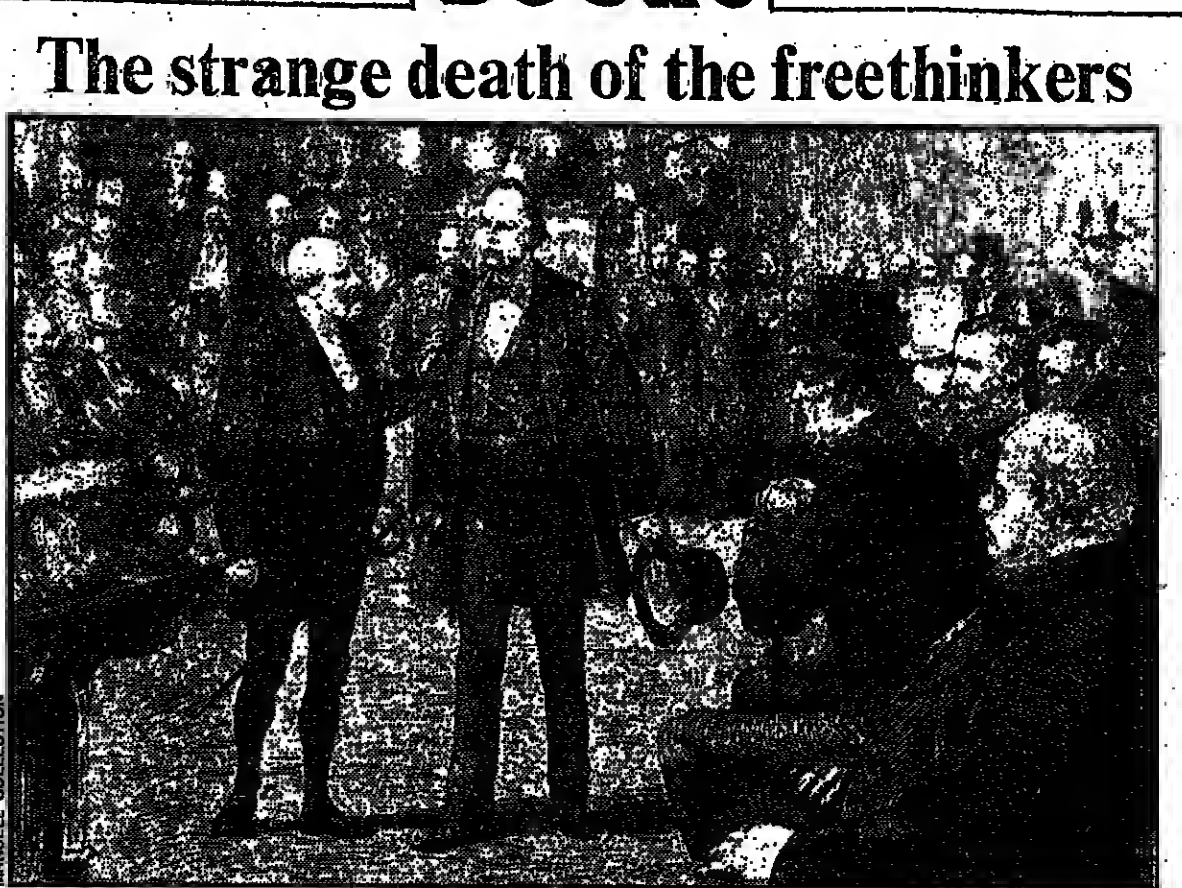
That neglect was in part the product of an imperial logic which is denied ex-imperial satellites. No dependency of any colonial metropole was designed to be self-sufficient. Each dependency, like regions of the metropole itself, had their own specialisms. Part of the imperial logic behind annexation was an expressed need for markets, therefore the goal of industrialization in dependent territories was an unlikely item on the agenda. The concept of satellite economies, and I would argue that colonies were more than merely economic satellites, they were also cultural satellites, is a useful concept. Part of the most significant reality African planters live with is that colonies were expressly non-independent, and not merely in the political sphere. Assertive and expressive as independence struggles were, their chances of independent destinies in the full sense of that word (which is of course denied many nations with higher energy economies than those of Africa) were small; they were as small in many cases as would be an independent Nottinghamshire or Hampshire. The interdependent nature of imperial relationships, while not for a moment suggesting that they were open-handed, mutual and reciprocal, is what lies at the heart of what is polemicised as "neo-colonialism". There remains something almost unlikely about the expectation of a state as minute and as impoverished as, say, Upper Volta achieving the degree of "independence" from its neighbours, let alone France.

In this fashion, and of course in many others that I simply have no time to relate, the political economies of Africa—and importantly the domestic economies of Africa—were changed over time. As I hope I've shown, attribution of colonial "blame", while frequently tempting, can all too frequently mask longer term reactions. The making of modern Africa's economies is a composite of the effects of the spread of the western dominated world economy, the imperatives of the colonial state, and the actions and reactions of the dynamic indigenous economies. To see it as such also denies Africans any historic resilience and makes Europe almost god-like in its power.

The author is a lecturer in the history of Africa, contemporary history of Africa at the School of Oriental and African Studies, London University. This article is an extract from a lecture he delivered last week, the first in the series of Noel Buxton Lectures organized by the Overseas Development Institute. These lectures are being delivered every Tuesday at 6 pm at SOAS.

BOOKS

The strange death of the freethinkers


MANSELL COLLECTION

A contemporary illustration shows "Mr Bradlaugh and the Oath of Allegiance—Captain Gosset, sergeant-at-arms, arresting Mr Bradlaugh upon the Speaker's warrant".

Radicals, Secularists and Republicans: popular freethought in Britain, 1866-1915
by Edward Royle
Manchester University Press, £19.50
ISBN 0 7190 0783 6

by Owen Chadwick

The Secularists, from Holyoake to Bradlaugh and Foote, were a prosy body of people with many of the more unattractive features of Victorian sectarian religion despite their dedication to irreligion. Holyoake made himself interesting by an autobiography. In modern times Arnstein wrote a good study of the Bradlaugh case. The latest case on blasphemy drew attention again to the prosecution of Foote and the slow late-Victorian amendment of the law of blasphemy. Historians have, however, usually thought the Secularists a by-product of a particular stage of popular rationalism and have not taken them seriously as a denomination. Edward Royle has done this for us, throwing unexpected light not only on the men themselves but on several themes of importance.

Royle already gave their thought and practice a new dimension in his book *Victorian Infidels*. Now he gives the same treatment to the later period, from 1866 to Foote's death in 1915, and describes the full flowering and the decline of the movement. Certainly Royle's two volumes make a weighty contribution to the study of Victorian life and thought. Based on the archives and periodicals of the Secularist groups, they draw on a wide variety of unpublished papers and rare pamphlets, yet the author never allows his exposition to be submerged in his inquiry, and he very much interests the reader.

The leaders were indomitable men. Often they were up against authority, sometimes against the courts, occasionally against mobs. They were neglected by the press except when they were in trouble. They might lose the tenancy of their house, or be deprived of custom if they traded, or get hurt in a brawl at a meeting, or charged with causing the brawl though they were men of (physical) peace, or rumoured to be guilty of some absurdity of doctrine or action. They were also up against it because only two had the slightest charisma for a work which above all needed success on platforms. We have a vision of worthy, honest men, one or two of them pedants, standing on soap boxes in Victoria Park, inexpert in coping with hecklers, regarded by passers-by with amusement, and going home to put some good writing into periodicals suspect to the police and subscribed to by a select number of the faithful. In the Christian literature of the late Victorian age they appear as Goliaths, armed to the teeth, upon whom puny men advanced with the slings and stones of faith. When we see these Goliaths through their own eyes as Royle enables us to do, it is clear that they did not feel in the least like conquerors. They felt more like early Christians witnessing in a hostile world.

But Bradlaugh was wonderful on platforms. He had every gift: eloquence, repartee, a huge stature, humour, courage. His personality was as vast as his frame. He could walk into a police station to stand bail for a friend and behave as though the whole place belonged to him and be treated by the police with deference. Because he fought for the cause that atheists should be allowed to take their seats in Parliament, he was a national figure and had a personality to carry that burden. He was so much larger than life that his dominance was a doubtful blessing for the movement. No one else could flower in his shadow.

How did the Secularists start? Bradlaugh was an Anglican boy whose turning-point came during his preparation for confirmation. Annie Besant married an Anglican clergyman. Harriet Law had been a Baptist, Ross a Scottish presbyterian, Parris a Unitarian minister, Watts started as an Anglican and Methodist preacher, Symes had been a Methodist preacher, Ramsey had been a choirboy in Norwich cathedral, Lloyd had been a presbyterian minister in Johannesburg, Edward Aveling, who married Eleanor Marx, was not only a nasty person but also the son of a Congregationalist minister. Both the Standrings had been Anglican choirboys. Moss was converted from Christianity by reading Tom Paine's *Age of Reason* at the age of 16. The two writers who influenced some minds of the twentieth century more powerfully than any of their masters had strangely different origins. Joseph McCabe was an ex-Franciscan. J. M. Robertson had never been anything but a radical critic of orthodox Christianity. Chapman Cohen, who presided over the little National Secular Society from 1915 to 1949, was a Jew.

Therefore a high proportion of the leaders had been ministers of a Christian denomination, or in training for that office. An even higher proportion had been *converted* to freethought, by a sudden and great experience of the mind or soul. That is, they had professed a devout Christianity. If they merely shrugged off a faith never taken into the bloodstream, they were not likely to think it important to confute, certainly not important enough to risk the pillory. None of them especially hated his father, though Bradlaugh quarrelled with his home during his adolescence. None of them made a good living out of their work; nearly all spent more than they could afford on travel, publishing, or litigation, and were embarrassed with debt, on occasion with heavy debt.

They attracted only a particular kind of working man in a particular two or three generations. They were all urban; none of them knew anything about the country. (Royle finds that the existence of industry was necessary to the existence of a body of freethinkers.) Their important home was London, with societies flourishing at Northampton, Leicester, Nottingham, Birmingham. The largest number of freethought societies lay in Lancashire and Yorkshire. It made little difference whether the Methodist or Baptist chapels were strong. Since this was a denomination among other denominations, even though its faith was irreligion, we would have expected its efforts to prosper where other denominations were weak—or, alternatively, to be weak where other denominations were weak because that was the kind of area where all denominations were weak and atheism was also a denomination. But neither of these possible rules can be seen to apply. In the Welsh mountains, where the chapel was strong, they did nothing whatever. But in Durham and Northumberland, also where the chapel was strong, they flourished modestly.

They tried to compete with the churches by using similar attractions. They had a hymn-book (a bad production) and harmoniums. There was talk of producing a secular version of *The Messiah* (nothing so illustrates the doctrinaire lack of sophistication) and the Stalybridge Secular Choir became well known for its music in the area. Groups had sewing circles, dramatic societies, concerts, magic lanterns, swimming clubs. Nine Secularists of Leicester—they could not quite raise a team—played cricket on a Sunday and were attacked by a mob which tore up the pitch and threw the ball into a river. In 1891 a cycling club was formed. Seriousness made it necessary to represent the purpose of this club as that of secularizing the Sabbath, but we may be assured that its founders really wanted to give their young people a good time and preferred to increase the enjoyment by clothing the good time with a moral aim.

But though they tried to attract, they failed. What made men join was not its imitation of a church but the fascination of the prosecution of its leader. Between 1880 and 1886 the electors of Northampton kept electing Bradlaugh to Parliament and Parliament kept refusing to allow him to take his seat. The long fight made the graph of Secular Societies rise through the country. Gladstone was right when he said that the attempt to keep atheists out of Parliament did far more for atheism than letting them take their seats.

But Bradlaugh's unpopularity was not at all simple. A lot of people wanted to keep Bradlaugh out of Parliament not because he was an atheist but because he was Bradlaugh. First, he was identified with the republican campaign and the abuse of the monarchy, his atheism being associated with republicanism. And in 1877 he was prosecuted for republishing *The Fruits of Philosophy*, an American book on methods of contraception which was more than 50 years old and out of date medically. It had sold steadily and obscurely until a Bristol bookseller, known to the police on other grounds, decked it out with various advertisements classified as indecent. The Secularist publisher Watts, who owned but had never read the pamphlet, was prosecuted; and after reading it refused to defend himself, pleaded guilty and allowed the plates and stock to be destroyed. Bradlaugh thought that Watts betrayed the cause of freethought, so with Annie Besant he slightly revised and then republished the pamphlet and informed the authorities. Bradlaugh and Besant were put on trial. Though he was convicted he fought on and on, until he achieved immunity from prosecution in continuing to publish the work. But this victory was achieved at the cost of bringing himself before the nation as an advocate of "obscenity". Many responsible men preferred Bradlaugh not to be in Parliament because they erroneously supposed him to be a promoter of pornography.

This notoriety not only helped to condition the long struggle in Parliament. It enabled Annie Besant's husband to win custody of their child. Above all it associated atheism with immorality, or rather confirmed dramatically the existing belief that an atheist could not be a moral person. Bradlaugh's national stature was very good for the Secularist movement for a few years, but when the battle was over and won, the notoriety stayed. And Royle is not certain that the fight was worth it. To win the battle over the pamphlet on contraception was to win a very small skirmish on the way to freedom of publication. Notoriety promoted intolerance.

Bradlaugh joined the cause of freethought to the cause of birth control with the object of preventing the poor being poorer. He never used high language about fulfilment in marriage. One opinion held that the trial of Bradlaugh and Besant put contraception into the public mind and for the first time made it a national campaign. Another opinion, with the weighty authority of Marie Stopes, held that knowledge of contraception advanced relentlessly and was checked when the trial of Bradlaugh and Besant simultaneously linked it with atheism and obscenity. It is certain from the records that hundreds of thousands of pamphlets on the subject were published during the decade after the trial.

The Secularists steadily gained rights: a seat in Parliament; then the right (or burden) of serving on juries; then the right of atheistic societies to receive legacies to promote their work; and, above all, that attacks upon religion were not blasphemous if they were serious-minded. Their principal weapon for such advances was to risk the law, for they knew that any form of prosecution was the only excellent means of encouraging their cause. The British might or might not be religious but usually they were quite fair-minded. And Christians were getting to respect "honest doubt" and were not always so likely to assume an atheist to be immoral or (especially) obscene. They were not willing to defend some of the positions which Tom Paine had assailed so confidently. In this way the National Secular Society contributed to the extension of freedom of speech and publication in Britain.

"We Christians", said the disreputable curate Stewart Headlam "owe much to the National Secular Society, it has helped us to overthrow many idols and to sweep away much rubbish". The remarkable contrast noticed by Royle is the change from the earlier and middle Victorian years, when the Secularists saw the Church of England as the ogre enemy of freethought, to the Edwardian years when they looked upon the nonconformists as a worse enemy.

They were mostly in favour of votes for women but being dedicated to the power of reason they wholly opposed the use of violence. One of the leaders, Ross, opposed woman's suffrage on the very traditional ground that since women were numerically more religious than men, their vote would strengthen religion in the state and "play disastrously into the hands of the priesthood". His opinion was exceptional. It was the hatred of violence that made them favour letting suffragettes starve themselves in prison, while at the same time believing that they ought to back the cause of women. They fancied that ultimately they would demolish the Bible with its masculine bias and one of them tried to revise the Bible so that women were dominant instead of men. The ultimate stage in Secularist contempt was attained when the suffragettes of Wallasey proposed to found a "women's church". The Acid Drops column of the *Freethinker* suggested that the east window should depict St Jael with her hammer, "the patron saint of very advanced ladies". Despite their support of the women's cause it was dominantly a male movement.

Still they declined relentlessly after 1886. They declined as the churches declined. Did they decline because the churches, being weaker, did not need such aggressive abuse, or because they were themselves a sort of church and shared in the general decline of churches? Royle is inclined to ascribe force to both theories. It was a radical type of Victorian dissent and shared the general fate of radical Victorian dissent. On the other hand, as Bernard Shaw said, when God is dead atheism dies also. Royle sees Secularism not as a body advancing because religion retreated, but a supplement to religion, dependent upon religion for its rise and fall.

They were rather old-fashioned. They lived in a world a long way from the world of cultivated agnostics like Huxley or Henry Sidgwick. In this book Karl Marx and Charles Darwin have only walk-on parts, for the Secularists never ceased to be the heirs of Tom Paine. Their audiences laughed at jokes about Noah's ark or Balaam's ass or the stipend of the Archbishop of Canterbury. In Hyde Park they asked crowds who was Cain's wife and denounced in vitriolic language the Calvinist doctrine of predestination. They were less effective in an age when eminent churchmen cared nothing about Cain and when Calvin only meant truth in a few Baptist chapels or the hills of central Wales. Their optimistic faith also became out of keeping with the times. They thought that light was surely banishing darkness, and that man would not cease to progress. This mood, which fitted the 1870s and 1880s, was discordant with the 1890s, and absurd among the Edwardians.

Royle has a more subtle explanation for decline. He wonders how much the rank and file really cared about the doctrinal ideas of the leaders. That is, he suspects that many working men joined the movement more for its political stance than its theology. And as the politics changed, the attraction to working men disappeared. For, though the leaders were very radical, they were very individualistic. No one ever resembled John Bull more closely than Bradlaugh. Their attitude to socialist doctrines, when they came, contained a touch of horror. Steadily they grew out of touch with the Labour movement which contained most of their possible constituents. They were radicals whose radicalism had been made to look obsolete. Foote, committed in soul to the extreme left, was intellectually almost a Conservative by the end of his life. Socialist ideas poured in among the rank and file but Foote knew that the strength of his groups lay in non-socialists, who would leave if he declared for socialism.

The socialist workers saw capitalism as a far worse enemy than Christianity; and unless they shared the views of Marx on the relation between religion and capitalism, they thought Foote's failure to assail capitalism a betrayal, his concentration on religion a waste of effort. They found themselves in alliance with some Christians against capitalism and were not prepared to do without this help. Foote was so doctrinaire that he could not understand how a man could possibly be both a Christian and a radical. Socialists gradually drifted out of the movement. They found far better support in little chapels, or John Trevor's Labour Churches,

continued on next page

BOOKS

Raised from the dead

A Double Dying: reflections on holocaust literature
by Alvin H. Rosenfeld
Indiana University Press, £10.50
ISBN 0 253 13337 8

By Words Alone: the holocaust in literature
by Sidra DeKoven Ezrahi
University of Chicago Press, £9.00
ISBN 0 226 23335 9

It was Gerald Green's TV drama *Holocaust* which first succeeded in awakening people throughout the world to the full extent of the destruction of European Jewry, though in fact holocaust literature had been in existence since the end of the war and before. These two books are concerned with the nature and development of this literature.

Inevitably they cover much the same ground, but do so in different ways and with differing emphasis. Both books are concerned with the most terrible events of the modern age, yet while never in any way obscuring these events, both are essentially literary histories. Both discuss the religious and other connotations of the term holocaust, a word derived from the Greek for "whole-burnt" which suggests the extent as well as the manner of the death of the Jews of Europe. Both are aware of the problematic nature of a concept which tends to reduce events of a vast scale to manageable and dangerously dismissible proportions.

Of the two books that by Sidra Ezrahi is more wide-ranging and factual in its survey of international sources, and full and detailed about documentary material, diaries, memoirs, novels and plays in many different languages. Rosenfeld's is better on poets like Celan and Nelly Sachs. Yiddish literature is still comparatively little known internationally, and as both surveys reveal, it is works like André Schwarz-Bart's *The Last of the Just* which through translations have proved most accessible to a wider audience.

While there were some earlier authors who, like Kafka in his *Penal Colony*, were capable of expressing in fiction the logic of modern technology, mechanized sadism and bureaucratic depersonalization, the first problem after the holocaust was whether literature was still possible in the face of such evil. Both books prove that the ultimate answer was not silence. Genocide did not mean linguicide. Some of the most significant poets still wrote in their native language even though, as in the case of Celan and Sachs, it was German. Otherwise a dislocated literature of uprooted persons often writing in acquired languages emerged. The testimonial imperative ruled, the horror had to be documented, the landscape of death had to be recorded and as far as possible transcended.

Exile, the fate of countless thousands, at least meant life. The concentration camp meant certain death for Jews, though a literature of survival also made a tentative appearance permitting an element of hope and the possibility of a future. In all such literary works the religious dimension is never lost sight of. Hence survival is a "Lazarene" experience which has to be constantly re-experienced in view of the countless victims who did not survive. Faith, however, did not always survive. Ancient and modern authors of lamentations wrote within the framework of faith; now there arose secular apocalyptists who shared a complete failure of faith.

The final part of Ezrahi's book deals with the intensity and scope of the renewed engagement of American writers with the holocaust. Clearly it was the Eichmann trial which forced itself upon the American consciousness through television. Two themes are shown to dominate the resulting literature. First, Hannah Arendt's interpretation of the trial as revealing the banality and bureaucracy of Nazi evil found common acceptance, and second, the complex psychological question of how anyone could commit such crimes without knowing or feeling he was doing wrong proved compelling.

In his final section Rosenfeld is particularly effective in showing how the holocaust can also be exploited in literature for various ends. It can insinuate the socio-political view that would explain Auschwitz solely by reference to the profit motive, although everything indicates that this was not the case. It can suggest that the holocaust was some blind murderous thrust against mankind in general and not just against the Jews. Above all Rosenfeld is able to demonstrate that the political programme of the Third Reich speaks to powerful sexual yearnings and this results in literary exploitation of an "Erotics of Auschwitz". The holocaust, in other words, can be treated as just another source of literary entertainment. This Rosenfeld calls the "imaginative misappropriation of atrocity", and he is right to expose it.

The holocaust, Norma Rosen has said, is the "central occurrence of the twentieth century". It has to be remembered as such, and this the best of holocaust literature helps to achieve.

J. M. Ritchie

Professor Ritchie is head of the department of Germanic studies at the University of Sheffield.

Prisons of subjectivity

Aldous Huxley: novelist
by C. S. Ferns
Athlone Press, £15.00
ISBN 0 485 11194 2

Can a man write interesting novels if he thinks that reality is nothing more than what each individual person believes it to be? Ferns's answer to this question is yes, provided our interpretation of the word "novels" is not too narrow.

Huxley's novels prove Ferns's point. The early Peacockian comedies were much admired in the 1930s and 1940s, and later fantasies like *Brave New World* and *Island* still provoke strong, positive reactions from ordinary readers. The difficulty with Huxley is that professional critics have backed the wrong horses. They insist that the best of Huxley is to be found in novels like *Point Counter Point* and *Eyeless in Gaza*, and they are wrong. The ordinary reader who looks for, and finds, immediate impact, interesting expressions of ideas, invention, is right. Therefore to appreciate Huxley properly we need to redirect our attention to the comedies and the fantasies, and look at the more portentous, "realistic" books more to clarify what is weak in them than to impose on them profundities which they do not, in fact, possess.

Although Huxley is a didactic novelist, the weaknesses of his fiction do not stem from his didactic intent. It is the nature of his ideas about the world that spoils his work. In itself, the near solipsism of Huxley's philosophical position may be no less respectable than the ideas held by other, much finer novelists of the period. But they are fundamentally incompatible with the writing of novels, because novels of the traditional Victorian and Edwardian variety impress by their unsurpassed description of the processes of social interaction. Huxley did not believe in the possibility of effective communication between people. He saw individuals locked in prisons of subjectivity. Or, as C. P. Snow put it, "he has never had any feeling for the social plasma in which we, as human beings, really live our lives."

To appreciate Huxley, then, it is no good applying the criteria by which we would judge other novels. Except, that is, where Huxley himself demands that we should do so. But that demand is only made in the post-*Chrome Yellow* and pre-*Brave New World* period of Huxley's writing, the period which according to the received critical wisdom includes his best work. When we look at Huxley's novels of this period we find, Ferns argues, a rather feeble and self-conscious attempt to represent the contingency and arbitrariness of existence. There is no escaping the fact that the author has a design on us, and that accidental events, like the descent of a dead dog from an aeroplane on the love-making of Antony and Joan in *Eyeless in Gaza*, are not calculated to convince readers that they are being invited to inspect the common surprises and oddities of life.

Huxley's inability to represent the normal give-and-take of living in society is complemented by his failure to grasp the nature of politics. As Ferns suggests, his political attitudes are an expression of his belief that "the behaviour of societies is no more than an expression of the private behaviour of the individuals who compose them." For most people, this will sound like an absurd proposition, extraordinarily naive in the simple connexion it draws between individual and group conduct.

Yet it survives all the other changes Huxley makes in his thinking about society, and seriously weakens both the polemical speculations and the representation of social life even in the most interesting of his books. Ferns recognizes this, but believes there is sufficient compensation in the fantasy worlds represented in the later fiction. Other readers will feel that the consequences of Huxley's beliefs are far more damaging to his work. Nevertheless I am sure they will enjoy this book as a level-headed and clearly written addition to the otherwise rather undistinguished world of Huxley criticism.

Patrick Swinden

Patrick Swinden is senior lecturer in English at the University of Manchester.

Avoiding neat identifications

Beckett and the Voice of Species
by Eric P. Levy
Gill & Macmillan, £9.00
ISBN 0 7171 1021 4

Just Play: Beckett's theater
by Ruby Cohn
Princeton University Press, £10.20
ISBN 0 691 06256 0

Of all the writers to have come to prominence since the Second World War Beckett has attracted the most comment, in books, in articles, in newspapers, in gossip. But although it is now 25 years since *Waiting for Godot* first became a *cause célèbre*, there is surprisingly little general agreement as to what is really of importance in Beckett's very varied enterprise, apart perhaps from the eye-catching phrases—"messenger of gloom" and "artist of the void" are two that spring immediately to mind—that obviously will not stand up to sustained examination. No doubt this is as it should be, for Beckett's writing is too subtle for anyone to imagine that they have mastered it completely, as each new addition to the oeuvre abundantly proves; who could have predicted *Company* after reading *For to end yet again and other fizzles*? Fortunately very few of the commentators on Beckett fool themselves that they have a single key that will unlock the works in front of them, accepting that they must approach each of them in a different way. "The danger", as Beckett warned 50 years ago, "is in the neatness of identifications".

Neither of these two new books on Beckett—one confined to his prose works, the other to his theatre—is much concerned with the "neatness of identifications", which is not to say that either of them is slovenly or inaccurate. On the contrary, both are written with the kind of commitment that Beckett's writing both encourages and rewards. Eric Levy, for example, begins with the eminently sound and refreshing contention that Beckett's position "should in no way be construed as a brand of Existentialism or a doctrine of Absurdity", and Ruby Cohn—making public for the first time the abandoned play of 1937 on materials accumulated from Beckett's intense study of the last years of Dr Johnson, aptly called *Human Wishes*—understandably cannot resist the prospect of seeing it "on a double bill with *Come and Go*". It is precisely this sort of directness that the more pretentious commentators again, sometimes wilfully, prepared to forego; there by forcing themselves to reach for the aspirin that, as Beckett himself suggested, will ameliorate their "headaches among the overtones".

At the same time, however, perhaps no serious reader of Beckett can fail to be struck by certain dominant overtones, whether intrinsic (in the sense that Beckett has developed them independently) or extrinsic (in the sense that he has taken them over from other writers). As has long been recognized, Dante is the primary source of the latter, and one of the high points of Levy's study is his patient and careful examination of *Mercier and Camier*—the most neglected of Beckett's full-length works, partly perhaps because Beckett himself considered it a "fiasco"—in the light of Dante's *Divina Commedia*. Levy at no point presses the evidence too far, and indeed only refers to Dante again in talking about *The Lost Ones*, which clearly encourages one so to do. Elsewhere, as for example when analysing the *Texts for Nothing* (which have also been seriously undervalued), Levy remains for the most part within the curious world they at once construct and deconstruct, without thereby suggesting that "Beckett is writing about writing", indeed explicitly dissociating himself from those who have suggested otherwise. Not everyone will want to agree with him here, although he may have felt it incumbent upon him to take such a line in the context of an argument that the *Texts* are a "farewell to Being". But it is one of the virtues of a book as direct as this that it provokes one into disagreement, or better still into re-reading each work or group of works in the light of it.

Perhaps as a consequence of his directness, Levy's book leaves one wishing it were longer, or differently distributed: none of the chapters exceeds 18 pages and none is shorter than 10. He does not, I think, significantly add to our understanding of the *Trilogy*, primarily because he does not give himself sufficient space to do so. Nor does his method seem perfectly attuned to the "residua", one of which (*From an abandoned work*) he wrongly assumes to have been "salvaged"—as its title indeed suggests—from something longer. But the virtues of his approach, especially in the earlier chapters, are unmistakable, and his book can be recommended, both to beginners and initiates, as at once sound and suggestive.

Ruby Cohn's third full-length study of Beckett is inevitably less arresting than her *Comic Gamut* of 1962 but a great improvement on *Back to Beckett*, which seemed to me to show some of the signs of weariness that its title, despite its punning potential, could not quite disperse. The title *Just Play* is of course taken from one of Beckett's most brilliantly successful theatrical experiments—*Play*—and is perfectly adapted to the simplicity that Beckett always emphasizes when directing rehearsals. But here, as anyone who has witnessed it will agree, it is far from "just play" and more like damned hard work for all concerned. The long section "Beckett Directs" is a useful record of this hard work, and is continually pointing up the differences each new production adds to what has gone before.

This is becoming more and more important in any assessment of Beckett's plays, as the stability of the original texts becomes more and more often eroded. Ruby Cohn also engages in the difficult scholarly archaeology of tracing how the original text comes into being, here in connexion with *Fin de partie*, which may yet be brought into still clearer focus by others studying Beckett's many and often tortuous manuscript stages. On "the play that was never staged" (and for that matter remains unpublished), *Eleutheria*, Ruby Cohn offers little more than paraphrase, adequate to be sure, but without the rigour that some other critics have generated, given the inherently rather unsatisfactory and intractable problem that the reader has no text to refer to.

There is, in short, perhaps no other book on Beckett's theatre (which has received rather less commentary than his prose, although first to arouse public interest in him) that offers quite the "gamut"—the word—to use Ruby Cohn's word—as *Just Play* does. It is as well organized as a book of such range could hope to be and, like Eric Levy's very different study, ideal both for those who are beginning Beckett and for those who may have been thinking they had come to the end of him. Neither Ruby Cohn nor Eric Levy need fear that they will go to the wall when the time comes for someone to put into perspective the now quite daunting mass of commentary on Beckett and to perform the more needed discrimination of what can be dispensed with from what is truly useful.

John Pilling

John Pilling is lecturer in English at the University of Reading and editor of the "Journal of Beckett Studies".

from preceding page

or extreme Anglo-Catholics like Stewart Headlam. Foote could not comprehend. He thought that Tom Mann must be a hypocrite who pretended to be religious in order to gain votes from the religious majority. As for Keir Hardie, Foote regarded him as the arch-traitor for using Christianity to support his socialism; for Keir Hardie's parents had been active Secularists. And this did Foote little good. Even irreligious working men resented his attacks on Keir Hardie.

If working men left the movement because its politics were wrong perhaps they originally came into it because its politics and not its religion were right. The Secularists had achieved a large political influence when they dared to denounce the monarchy more vitriolically than anyone else. During the war for parliamentary freedom they headed a cause which the wisest heads in Britain wanted to win yet they were also men of the law and constitution, disliking red flags and red caps at public meetings, who would have nothing to do with the Paris Communists, and quarrelled with the Internationals. Bradlaugh went to Sedghill to give a republican lecture and was locked out of the schoolroom at the colliery. The Catholic priest let him use the Catholic schoolroom. Was Father O'Dwyer a freethinker or an unusually tolerant priest? Probably he was an Irishman who greatly disliked the British government and monarchy. This helps to explain why the membership of the Secularists was so small, yet meetings in their heyday could gather six thousand men.

The movement, therefore, was not only a religious or irreligious movement, but a political movement among working men; urban, industrialized, class-orientated. It was not replaced by some modern and far more sophisticated version of positivism, but by socialism. The most interesting part of this remarkable book is its contribution to the problem, still partly unsolved, why French and German socialisms were so consciously irreligious while British socialism was not.

By 1899 the core of freethinkers numbered under a thousand, and five years later the number of branches fell below thirty. The famous Hall of Science, which looked like a cross between an evangelical chapel and a provincial theatre, passed into the possession of the Salvation Army. Holyoake's old hall, the John Street Institution, so notorious in mid-Victorian years, passed to the West London Mission of the Methodists. The inner city declined, and the suburbs grew, and the members of the denomination were too scattered to bring together for meetings. It was humiliating when, at the beginning of World War I, *John Bull*, edited by Holyoake's nephew Horatio Bottomley, went religious.

Owen Chadwick is Regius professor of modern history at the University of Cambridge.

BOOKS

Economic lesson from Japan

The Labor Market in Japan: selected readings
edited by Shuosaku Nishikawa
translated by Ross Mouer
University of Tokyo Press, £8.50
ISBN 0 86008 262 8

The Developing Economies and Japan
by Saburo Okita
University of Tokyo Press, £7.25
ISBN 0 86008 271 7

Japan's Economic Aid
by Alan Rix
Croom Helm, £14.95
ISBN 0 7099 0433 9

Knowledge of contemporary Japan in Europe is not only scanty but relies far too heavily on western sources or on work by Japanese authors specifically written for foreign audiences. The difficulties of the language provide a natural barrier, but the paucity of translations of original Japanese material also plays a role.

Hence Ross Mouer and the Japan Foundation are to be congratulated for providing us with an English version of 14 Japanese articles, the more so as these cover the labour market—an area in which misconceptions abound. In the words of the translator, much of the foreign literature "has relied on individual case studies, participant observation, and personal anecdotes". It has also tended to emphasize allegedly unique features such as "permanent employment" or "seniority wages" which, if taken literally, would suggest an exceedingly inflexible employment structure.

The present collection of essays takes up these various institutional features—life employment, early retirement (from the firm, not the labour market), age and intra-firm wage differentials, "spring wage offensives"—which have stimulated western, but also Japanese interest and, on occasions (for example, in the articles by Kaneko and Nakayama), points out how differences with the West have often been exaggerated.

Yet despite such promise, the volume does not quite succeed in presenting a comprehensive, or even clear, picture of Japan's labour market. Partly this is because some of the articles cover very limited areas or merely discuss detailed statistical findings. More generally, perhaps, it has to do with a profusion of description at the expense of analysis. The paper by Obi is an exception—in discussing labour supply he replaces (in characteristic Japanese fashion) the utility maximizing individual of neoclassical theory by a utility maximizing group, in this instance the household. A welcome feature, as the translator remarks, is that most of the essays are policy oriented and one gains an impression of the major preoccupations of today. Two, in particular, stand in marked contrast to the West—how to ensure that shorter working hours will increase productivity (rather than employment) and how to cope with the low incomes of older workers (rather than youth unemployment).

Saburo Okita has had a long and distinguished career in Japanese and international economic institutions and even a recent spell as foreign minister. Some of his essays in *The Developing Economies and Japan* reflect the constraints of office and are polite diplomatic speeches on the needs and virtues of cooperation between developed and developing countries. Okita is at his best in the half of the book devoted to lessons from Japan. While in many ways Japan's experience cannot easily be copied, there are aspects of Japanese policies which, Okita argues, can be transplanted to developing countries—the emphasis in the Meiji period on broad technical and vocational education rather than on universities, the help which local government has traditionally provided to local small-scale industry, the use of protection for specified periods. Okita is particularly concerned with irrigation problems and shows convincingly that one of the major reasons for the sharp differences in land yields between Japan and other Asian countries lies in the much higher irrigation rate of Japanese fields.

It is a pity, perhaps, that he does not emphasize the importance of Japan's pre-Meiji experience—a period in which it now appears that not only did literacy spread, but agricultural productivity rose and birthrates were reduced. Japanese economic development may have started much earlier than suggested by the traditional interpretation which sees a political revolution triggering off a sudden leap from stagnation to growth.

Okita is all in favour of more aid, but relatively silent on the insufficiencies of Japanese aid. The latter are brought out by Rix's book—comparatively small flows, a low proportion of grants, relatively hard terms for loans and a continuous flavour of commercial purpose. But Rix does not treat the economic motivations and effects of Japan's aid effort. He is interested in the institutions and processes which have formed aid policies and provides a wealth of administrative detail (chapter two treats us to an almost day-by-day account of how Japan's International Cooperation Agency was created at the turn of 1973), which may be of value to the student of Japan's official decision-making machinery. His story is very much a story of bureaucracy—the bureaucracy decides on aid and divisions among conflicting ministries prevent aid from being larger.

There is certainly truth in this (though the almost complete absence of references to the lobbying of private interest groups seems surprising), yet there must be more than just bureaucratic dissension in explaining a low aid effort. Rix himself asks two very interesting questions in the introduction (which he unfortunately does not answer)—are not bureaucratic divisions common to other areas of Japanese policy making and to other countries' aid administrations? The answer to both questions is almost certainly yes, yet despite strong inter-ministerial conflicts, Japan has often acted quickly and decisively, while other countries have been able to achieve larger aid budgets. There are probably deeper reasons for Japan's unwillingness to extend assistance abroad: the absence of the imperialist motivations of the United States or the Soviet Union; a much more limited colonial history than Britain's or France's; but also, and more importantly, the insular tradition of the country, its lack of interest in proselytizing a Japanese culture or a "Japanese way of life", even its incomprehension of the Christian philanthropic streak which runs through the West's cultural tradition.

Andrea Boltho

Andrea Boltho is a fellow of Magdalen College, Oxford.

Taxes: keeping up with inflation

Inflation and the Personal Income Tax: an international perspective
by Vito Tanzi
Cambridge University Press, £12.50
ISBN 0 521 22987 1

"Inflation distorts tax systems and, in the process, affects the level of taxation and its incidence among taxpayers . . . This book deals with these distortions, with respect to income taxes, and with what can be done, or has been done in various countries, to deal with them." (page xi)

The book is, on the whole, very good at explaining the ways in which inflation distorts tax systems. Unless fully indexed (an almost impossible task) price rises will change the real tax system. Tanzi argues that there are three important ways in which this happens. First, if the legal definition of the tax base differs from the economic definition the real tax base will change. For example, if taxes on profits are based on historical costs rather than replacement costs, the tax base (profits) will be inflated.

Secondly, if allowances and rate bands are not indexed they will change in real terms. For example if personal allowances are not increased in line with inflation they will decrease in real value and the starting point for positive rates of tax will be lower in real terms. And thirdly, if different taxes are collected with different lags the real tax structure will change. For example, if self-employed persons were to pay tax 12 months after earning it while employed persons paid the tax with no lag then the self-employed person would pay only 78 per cent as much tax as the employee, if inflation were 2 per cent a month and everything else were equal.

Tanzi has a useful summary of the various ways countries deal with inflation. Three countries—Canada, Australia and Argentina—have income tax systems that are fully indexed, i.e. there are automatic and complete adjustments. Three countries are listed with automatic but incomplete adjustments. Sweden indexes tax brackets but not allowances, while Peru and the United Kingdom index allowances but not brackets. (The United Kingdom position has been changed by the 1980 Finance Act—an indication of how rapidly this kind of information can date.) France, Luxembourg, The Netherlands and Israel have automatic mechanisms which contain discretionary elements. Brazil, Chile, Denmark and Iceland have systems of indexing not directly related to inflation.

Despite these and other useful features, the book lacks any central theme. The selection of taxes seems arbitrary. Capital gains taxes are included but social security taxes excluded. The level of economic expertise expected of the reader is unclear. The average rate of tax, a particularly simple concept, is defined (83 pages after it is introduced) but more difficult concepts are not defined or are defined in unhelpful ways. For example: "The increase in the average tax rate at any level of income will depend on the relationship between the marginal and average tax rates, which in turn depends on the effective progressivity of the income tax structure." (page 15) While this is true, it is not particularly helpful in the absence of further information. Tax elasticity (the percentage change in tax receipts divided by the percentage change in national income) is extensively discussed in chapter seven but defined in chapter eight.

The statement that the public finance literature "assumes no shifting of personal income taxes" (page 132) suggests a careful avoidance of that literature.

The most disappointing feature of the book is that it does not deal with the distorting effects of unindexed taxes in a systematic way despite the claim quoted at the start of this review. There is no systematic attempt to examine the effects of unindexed taxes on the supply of capital or of labour, no analysis of the effects on the distribution of income. On the other hand there is a chapter in which it is argued that failure to index taxes leads to a wage/price spiral as workers try to maintain their real wages when these are reduced by increases in real taxes in inflationary periods. The evidence is hard to evaluate. For example, in the case of the United Kingdom it is stated that a study "by Wilkinson and Turner provides an exhaustive support to the tax shifting hypothesis" (page 142) without mentioning the nature of that support. Perhaps the best analysis of the distorting effects of inflation is contained in an extension of Fisher's interest rate theory to incorporate inflationary expectations.

Tanzi does provide a useful service in bringing together information about the ways in which inflation distorts the income tax system. Nevertheless the book is likely to disappoint the groups to whom it is addressed: policy-makers, students and academic economists.

C. V. Brown

C. V. Brown is professor of economics at the University of Stirling.

Satisfying public wants

Lectures on Public Economics
by A. B. Atkinson and J. E. Stiglitz
McGraw-Hill, £7.95
ISBN 0 07 084106 3

This book is certain to become the standard textbook in the theory of public finance. The reputation of the authors—who are the outstanding figures in public economics on each side of the Atlantic—would ensure this result even if the volume they had written together was unreadable. But they have, in fact, written an excellent series of lectures. For the first time, a synthesis of the wide range of developments in the subject over the past 20 years is available in a single source, and what have often appeared as somewhat abstruse contributions are presented at a single level of lucid exposition. This is still a relatively demanding level of exposition, however. The lectures are fairly described as a graduate textbook, and the authors' hope that much of it may be accessible to final year undergraduates may be somewhat optimistic.

For 20 years the definitive textbook has been Musgrave's *Theory of Public Finance*, and a comparison of its contents with those of Atkinson and Stiglitz's lectures is an instructive guide to the development of the subject. One minor battle has been won; Musgrave describes his preference for "public economy" rather than "public finance" as a description of his subject, but was reluctant to use an unfamiliar term. Atkinson and Stiglitz have no need for Musgrave's hesitation.

The three main parts of Musgrave's treatise were concerned with normative analysis of tax and public expenditure determination, with positive analysis of tax incidence, and with the use of public finance for economic stabilization. The introduction of the third of these subjects—compensatory finance—was what Musgrave saw as the principal innovation in public economics at the time he wrote. Yet it is that subject which has disappeared altogether from Atkinson and Stiglitz. Who could have expected in the heady Keynesian days of 1960 that belief, and interest, in governments' capacity for macroeconomic management would wane so quickly in the inflation and recession-hit 1970s?

What Musgrave described as classical aspects of adjustments to budget policy remains, however, and it is in this area that the teacher brought up on Musgrave will feel least need to modify his approach when confronted with Atkinson and Stiglitz. We now have much more empirical information on the effects of taxation on labour supply—though not necessarily more firm conclusions—and we have a rather different view of the vexed issue of the incidence of corporation tax. But in these traditional areas of analysis of the ways taxes influence production and consumption decisions the pace of theoretical advance seems relatively sedate.

What Musgrave called the satisfaction of public wants—how public expenditure and taxes should be determined—receives equal attention from Atkinson and Stiglitz. Yet the treatment of this subject is transformed. On the expenditure side, the theory of public goods has mushroomed and the problem of determining how much to provide, well understood by nineteenth-century public finance economists, has been dignified with the title of incentive compatibility and much formal analysis. The analysis of sources of government revenue has been transformed by the growth of the theory of optimal taxation, which denies the possibility of Musgrave's attempted separation of the allocation and distribution branches of government, and has overturned conventional views of the relationship between alternative tax instruments and the appropriate shape of tax schedules. It is here that the outstanding exposition of the issues which Atkinson and Stiglitz provide represents the first full textbook treatment of the subject and one which both students and their teachers will greatly appreciate.

If a twenty-year interval persists, the next classic text on the subject is due in the year 2000. What changes can we expect Atkinson and Stiglitz's successors to introduce? My suspicion is that the subject of the tenth lecture—theories of the state and public economics—will take up much more space in that volume. Economists have traditionally assumed that the principal problem of ensuring equity and efficiency in government behaviour was that of working out what the government ought to do. But this ignores the problems of devising appropriate incentive structures and mechanisms to secure efficiency within government organizations themselves. This analysis of the behaviour and control of bureaucracies has begun to receive increasing attention. If modern economies are to be able to secure their increasing demands from the public sector, it is to this subject that much more effort will need to be devoted in the next twenty years.

J. A. Kay

J. A. Kay is director of research at the Institute of Fiscal Studies, London.

The Royal Economic Society's 30-volume Collected Writings of John Maynard Keynes has reached volume XXVI (Macmillan, £15.00). Edited by Donald Moggridge, the volume is entitled *Activities 1941-1946, Shaping the Postwar World: Bretton Woods and Reparations*. The main sources of material are Keynes's papers in the Public Record Office, but the editor has also used the papers of JMK's colleagues and friends.

BOOKS

Darwinian theory in its philosophical context

Darwinian Impacts: an introduction to the Darwinian revolution
by D. R. Oldroyd
Open University Press, £7.95
ISBN 0 335 09 001 X

The literature on Darwin's ideas and their impact on the world is now truly gigantic. "But if one wants to find a single book that deals with the Darwinian theory of evolution, the way in which it fitted into the history of Western thought, its subsequent influences, and the general consensus among contemporary scholars as to the status of the theory and the role it plays in biology, then it is hard to know where to turn." David Oldroyd's very true words both describe the present situation and give the justification for his book. It is a heroic effort to compress within 400 pages a readable account of these topics.

Part I, "Antecedents of Darwinism", discusses early views on man in relation to animals, modes of classification, the great chain of being, Linnaeus, Buffon, Lamarck, Cuvier, Lyell, the *Naturphilosophen*, Chambers, Paley and Malthus. Part II, "Darwinism", deals with Darwin's life and work (briefly), the *Origin of Species*, Wallace and simultaneous discoveries in science, the logical structure of the Darwin/Wallace theory, criticisms of it in the nineteenth century, Darwin's later work with special attention to his theory of pangenesis, Mendel and the synthetic theory of evolution, and neo-Lamarckism.

Part III, "Consequences of Darwinism", deals with the public reception of the *Origin* (in the nineteenth century), Herbert Spencer, social Darwinism, Darwinism and politics, theology, philosophy, psychology, anthropology, literature and music, ending with "Concluding remarks and personal reflections". Lastly comes an appendix "Some Historiographical Considerations", which gives Oldroyd's methodology and should be placed and read first in the book. Suggestions for further reading are extensive, and there are copious notes to each chapter which will bring the reader up to date in the historical and philosophical aspects, except that the strength of fundamentalism in the New World is underestimated.

Although so packed with information, references, comment and discussion—the author himself describes one section as a rather breathless scamper—the book is very readable and well presented. Proof-reading was not too thorough (one is grateful for the bookish Kant as "Immanual") and the least satisfactory feature is the text-figures, several of which used further explanation and one or two are partly unreadable.

The book is an exercise in the history of ideas as explained in the appendix, an attempt to estimate ideas in the context of their time. In this Oldroyd indicates that he is following A. O. Lovejoy, author of *The Great Chain of Being*, and is severe on those scientists turned historians who seem concerned only with disentangling truth from error using the standards of their own day.

This can certainly be overdone, but one must be careful not to throw out the baby with the bathwater. Lovejoy was a philosopher dealing with philosophical ideas for which there are no empirical tests and no hope of certainty. Science differs from all other human activities in that, very slowly and after much controversy, some arguments can be settled. There is progress in science, with wider and wider explanations being found for more and more phenomena, which cannot be said of philosophy. Oldroyd is so interested in ideas—those of Bergson and Rudolph Steiner as much as those of Darwin and Mendel—that it is not always clear what he regards as legitimate developments of evolutionary theory, what as mere employment of it as a pretext, and what downright lunatic fringe.

Oldroyd is almost the only philosopher I know who has understood the significance of Kettlewell's work on the famous industrial melanic moths, which disposes of the nonsense about the survival of the fittest being a tautology and untestable. Yet (it seems almost ungrateful to say it) the biology is perhaps the least satisfactory aspect of the book. The attempt to estimate "the general consensus among contemporary scholars as to the status of the theory" (largely confined to one chapter) gives no idea of its present highly developed mathematization and explanatory successes in fields such as speciation, population biology and animal behaviour. Equally, he is liable to miss the full force of the scientific evidence in earlier contexts.

For example, he pays comparatively little attention to the evidence from geographical distribution and from vestiges whether in Buffon, Erasmus Darwin, or the second half of the *Origin*. It was these subjects that unsettled the thinking of many in the eighteenth century as well as the nineteenth; and it was the second half of the *Origin* which slowly convinced people of the validity of evolution, even though many rejected the mechanism of natural selection.

Similarly, in dealing with Lamarck, he has not appreciated that the inheritance of acquired characters was a commonplace in the eighteenth century—Erasmus Darwin made great play with it—and Charles Darwin cannot have thought of it as peculiar Lamark (to ascribe it to him, as is so often done, was Samuel Butler's error).

Lamarck's idea of necessary progression in evolution, as the result of caloric in the lowest forms and caloric plus effort in the rest, was specially Lamarckian and was based on ideas on physics and chemistry that were ludicrous in his own day. Cuvier was right scientifically at the time in much (not all) of what he said about Lamarck, and Darwin was right in describing necessary progression as put forward by Lamarck as nonsense; he was equally right in appreciating Lamarck's labours in classification.

Perhaps it is not surprising that Oldroyd recommends Gertrude Himmelfarb's book *Darwin and the Darwinian Revolution* (published in 1959); he says that earlier reviewers "tended to deprecate [depreciate?] it and made much of the fact that it was not written by a person with specialized biological knowledge, and also, perhaps because it dared to write critically of Darwin on occasions". The fact is that anyone can write critically of Darwin if they have genuine scientific criticisms to make (I have done so myself) but criticisms arising out of plain ignorance of evolutionary work in this century do not and cannot command respect. Writing the history of science is far more difficult than most philosophers and historians (and some scientists) seem to realize: the ideas cannot just be abstracted from their concrete and precise basis. The best piece of biological history I know is in S. J. Gould's *Ontogeny and Phylogeny* (Harvard, 1978). But as an introduction to Darwinism and its influence on scientists, philosophers, the world in general and its lunatic fringe, Oldroyd's book is essential reading.

A. J. Cain

A. J. Cain is professor of zoology at the University of Liverpool.

Diversity of animal life

The Complete Encyclopaedia of the Animal World
edited by David Burn
Octopus, £12.95
ISBN 0 7064 0760 1

There is a bewildering array of books on the market which survey the animal kingdom. Most of them are decorated with superb colour photographs and this volume is no exception. What makes it different from many other encyclopaedias is that the text has not been hastily compiled simply to act as a vehicle for the illustrations. David Burn has spent two-and-a-half years compiling the work and has got together experts in all the animal groups, mostly research workers and university teachers, to produce an excellent introduction to the million or so animal species in the world today.

The main body of the book is a traditional survey of the animal phyla starting with the simplest forms of life, like the protozoa, and then working through the invertebrates and vertebrates to the *monkeys and apes*. *Many* other books skip quickly through the "lower phyla" so as to devote most space to the reptiles, birds and mammals; afterall most people find a photograph of a gorilla rather more inspiring than one of a tapeworm. This book, however, gives an authoritative treatment of all the animal groups. Here in all their beauty are the comb jellies, the peanut worms, the sea squirts and the nemerteans. Although man has the usual honour of being the last species considered, he gets *no more* than the double-page spread given to the water bears, tiny sea creatures less than half a millimetre long.

The text for each group begins with a description of the variety of species in the phylum and then goes on to show their structure and physiology, feeding behaviour, life-histories and habitats. The fossil record is discussed and evolutionary relationships between the different groups are noted. The writing is up to date and although technical terms are used these are always explained with the help of a glossary and clear diagrams. We can see how birds breathe, how reptile jaws evolved, how the water current flows through a sea squirt and what an earthworm's reproductive system looks like.

The colour photographs, which appear on almost every page, are all the more attractive and informative because they show the animals doing something interesting. A yellow spider, blending perfectly with the petals on which it sits, is devouring a bee which was attracted to the flower to collect pollen. A sun spider rips a gecko apart. A scorpion carries its young on its back and a velvet worm gives birth to live young, which can be seen emerging head first from its body. A brown bear sweeps a salmon up from a torrent and a bushman cuts up an antelope in the desert. This main part of the book provides an inspiring and scientifically sound introduction to the diversity of animal life, from the amoeba to the whale, and will be useful for schools and introductory university courses as well as for the laymen.

There are also good sections on animal distribution and survival strategies. It is shown how movement of the continents helps us to interpret present-day distributions of some animal groups; and on a finer scale, ecological principles are summarized to explain how the various species occupy different niches and can coexist in communities. It is a pity that the introduction to the book, by V. C. Wynne-Edwards, continues to champion the view that animals have evolved ways of restraining their population growth so as to maintain the balance of nature, an idea with which most biologists would strongly disagree.

The encyclopaedia ends on a depressing note with a section on conservation. With so much of the *world's* natural habitats *destroyed* and so many of our most spectacular animals, like the tiger and humpbacked whale, driven to near extinction, it would be a pity if our *only* chance to appreciate the diversity of life illustrated in this book would be to visit a nature reserve or a zoo.

Nicholas Davies

Nicholas Davies is a demonstrator in zoology at the University of Cambridge.

Food microbiology

Microbiology of Foods
by J. C. Ayres, J. O. Mundt and W. E. Sandine
Freeman, £10.80
ISBN 0 7167 1049 8

At a time when books on food microbiology are becoming relatively common, the approach taken by new authors is of particular interest. Is their book mainly a compendium of commodities and the micro-organisms thereon or have they attempted to interpret the dominance of certain micro-organisms on particular foods in terms of an interplay between the physiological attributes of the main contaminants and the physicochemical properties of the substrate? As the current debate among European food microbiologists centres mainly on the vexed questions of the statistical validity and the utilitarian value of "standards" based on traditional methods of sampling and testing, it would be a bonus indeed if a new book contained a thorough discussion of the contribution of analytical microbiology to the wellbeing of urban man.

Ayres and his collaborators leave no doubts about their objectives; they state in the preface that they have attempted to provide a textbook that embraces the available information about food microbiology. Indeed, they appreciate that should their attempt be successful, the book will be to contemporary food microbiologists what Tanner's *Microbiology of Foods* was to those who learnt or *practised the* discipline in the 1930s. The authors identify a heterogenous readership: advanced undergraduates, beginning graduate students, beginning microbiologists, and even lay-readers.

The first chapter (40 pages) of part one of the book deals with the classification of bacteria, yeasts and moulds and the text is supported by line drawings (good) and photographs (not so good). Although the space allotted must perforce result in a superficial treatment, the information ought to provide background to those who have had minimal training in microbiology. Their quest for further information will not be helped, however, by the bibliography, because there are few references to recent reviews of microorganisms recovered from foods. For example, the genus *Alteromonas* is not listed in the index. Many of the genera noted in this chapter are associated with specific changes in foods in the next five that survey spoilage and diverse methods of preservation.

Although the text (100 pages) covers a broad spectrum, many useful definitions are given and the reader is introduced to concepts that relate the success of spoilage organisms to the nature of a food or the methods used for its preservation. Standards are touched upon rather philosophically, the case for these resting on Elliott and Michener's statements that have apparently served as Federal Guidelines in the USA. At times the discussion wanders a little, perhaps through the failure of the editor to contain the enthusiasm of an author for his pet subjects.

The authors adopt a broad interpretation of fermentation, the topic of the second part of the book (98 pages), and the text races along in discussions of the production—and spoilage—of wine, beer, hard cider, bread, vitamins, cucumber pickles, vinegar, miso, sake, tempeh and so on.

The metabolic pathways, flow diagrams and photographs are useful adjuncts to the descriptions of processes but I would have liked some guidance as to the intended purpose of the "boxes", expositions isolated by lines from the rest of the text.

Part three (278 pages) dealt with the microbiology of commodities from spices to eggs and egg products. Although little space is available for each commodity, a good account emerges of the microorganisms that cause spoilage.

The last part of the book (152 pages), on food-borne illnesses, covers non-microbial food-borne illnesses (indigestion, algal toxins, metal poisons, and so on), microbial food-borne infections, and bacterial and fungal food-borne intoxications. An adequate index should assure ready entry to the text.

The outline of the content of the book indicates that the authors have painted a broad canvas. The question that needs to be asked is have they been successful? In the context of American courses in food science and food technology, the answer would seem to be yes.

As main courses in food microbiology are relatively uncommon in British Universities, there will not be much demand from undergraduates, but the library ought to hold a copy for reference. Indeed, the moderate price should make it available to all lecturers, college students and undergraduates who do projects on food technology or food microbiology.

R. G. Board

R. G. Board is senior lecturer in biological sciences at the University of Bath.

Each tiny brush stroke

Essentials of Physiology
by J. F. Lamb, C. G. Ingram, I. A. Johnston and R. M. Pitman
Blackwell Scientific, £6.80
ISBN 0 632 00529 7

Students of physiology demonstrate the same high levels of biological variation as any other group of, not quite randomly, *selected subjects*. It is self-evident, though their teachers often suppose a uniform mode of behaviour, that their preferred learning patterns are also very *diverse*. This must be the justification for yet another standard textbook in physiology aimed at "students of science, medicine and dentistry, and allied professions". How does the *Essentials of Physiology* differ from all the others? What have Professor Lamb and his colleagues contributed to a new approach to learning this essential and intriguing basic medical science?

They claim that they have written a short book, to encourage students to read it: 420 pages is short by the standard set by the earliest complete text in English, that of Schäfer (1898), which came in two volumes each *containing* well over 1,000 closely printed pages, or Starling's classic text which, from its first to its fourteenth edition, exceeded 1,000 pages. However, there has been a *fashion for slimming*; many modern texts have 400 or 500 pages. In this respect this volume is not exceptional.

Their chief claims to originality are that they have "predigested the usual information" and that it is presented in graphs and diagrams "as simply and concisely as possible". The latter claim is sustained by the facts: the book abounds in graphs and diagrams, albeit that some of the former have unlabelled axes (a bad habit which needs no reinforcement), while to this student *some* of the diagrams are incomprehensible. It could be that this is just another sign of biological variability. A clear, simple diagram to some is a meaningless maze of lines to others. Nevertheless, by and large for the visually inclined who relish the reinforcement of word by picture this book offers an excellent way to learn.

What of predigestion and the commonly claimed virtue of presenting concepts rather than facts? It is too easy from the safety of the armchair to be critical, yet one is entitled to judge by the authors' own standards, though the agony of writing was theirs. There is little evidence for outstanding achievement in presenting concepts, though some difficult ideas are clearly explained. For instance, countercurrent exchange in the kidney is elucidated by the use of analogy, and the complexities of muscle spindle function are elegantly laid bare.

Perhaps best of all, the reader is, from time to time, given small rewards—like the rat (page 266) who, though he seems to be operating a computer keyboard, is in reality getting rewards for bar-pressing. These tit-bits, like the speculation that with just a little more auditory acuity we could hear our heads vibrating as we walk, or the astonishing fact that the pulmonary capillaries are 1500 miles long, are pegs upon which the ordinary reader can hang ideas. The sad fact is that there are too few such memorable trifles: the floundering student is given little support, remaining in danger of drowning in a sea of facts.

The organization of the contents into parts and chapters beginning with basic properties, through maintenance systems to integrations, seems at first sight novel and interesting. Regrettably it is just a thinly veiled version of the standard format—cells, nerves, muscles and the systems.

Do all writers of physiological texts visiting a gallery examine the structure of the canvas, the composition of the paint and each tiny brush *stroke* before looking at the whole painting? The fascination of physiology to the majority, is as a tool to unravel the ways in which organisms adapt to their environment. Thus, it is legitimate for the whole to take precedence over the parts. Only the professionals become totally absorbed in some intriguing but tiny detail. It seems perverse, therefore, to relegate exercise and climate to the end of the book, as if they were extraordinary stimuli. In this book, as in so many others, the preferred path to understanding is along the path of the study of basic details, concluding with a rather casual glance at overall phenomena. This indicates a state of *pedagogical arterial sclerosis*, *or* at least indigestion.

The half-hearted use of SI units will serve only to prolong the agonies of conversion. Having, together with other disciplines, embarked along the hard road, we should not waver. The reader is invited to cohabit with old and disreputable friends: calories, kilogrammes, metres per minute, millimetres of mercury and Angstroms, instead of having sole intercourse with their more respectable but prissy cousins: joules, watts, pascals and nanometres.

It is always too easy to pick out errors in first editions. Nevertheless, there is one that deserves mention: how nice it would be to solve the nation's energy crisis by harnessing the 500 kilowatts generated by each individual during sleep (page 414). For many students the printed word takes on a quality of "absolute truth": what, then, can one make of the "fact" that the pulmonary arterial pressure is 30 mmHg when a few pages on it is 25? How much better to have introduced the concept of range and variability, concurrently demystifying the printed word? Science is not a paragon of stylistic English, but it must at least be precise: do oxygen consumption, uptake and usage all have the same meaning? If so, should we discard all but the clearest? If not, the terms should not be used indiscriminately to describe the same phenomenon.

In summary, the book has many good points. It is readable and not too long, it emphasizes the graphical approach and confesses ignorance where appropriate. However, it is a little carelessly compiled. But above all the justification for adding to the numerous existing texts is not fully sustained. There is no evidence of a radical reappraisal of the optimal ways of achieving the aims.

Students embark on the study of physiology with shining eyes and open minds; too frequently they end up disillusioned and soured by the subject. An answer to this repeated dilemma is to break away from the patterns of teaching established by the traditional texts for nearly a hundred years. What we need is a text that begins and ends by looking at the whole organism. That is not to say that it should not delve *into details* but do so only where and when appropriate. *Essentials of Physiology* is not that book—one day patience will be rewarded.

Rainer Goldsmith

Rainer Goldsmith is professor of physiology at Chelsea College, London.

Botanical zonation at the poles

The Arctic and Antarctic: their division into geobotanical areas
by V. D. Aleksandrova
Cambridge University Press, £15.00
ISBN 0 521 23119 1

Although they are often treated as very similar, the Arctic and the Antarctic are very different areas in both climatic and biological terms. Opportunities for individual scientists to work extensively in the Arctic and the Antarctic have been very limited, so that comparative assessments of the two regions are rarely based on personal experience of the differences. This is the case in the present volume and accounts for some of the inadequacies.

V. D. Aleksandrova has worked in the Soviet Arctic for over forty years and can be regarded as the foremost authority on the vegetation of the tundra regions of the USSR. The area of tundra within the USSR is greater than in either the USA or Canada, and as it contains representatives of most community types she is in a good position to attempt a synthesis for the Arctic. The relative amount of space devoted to the two regions are functions both of the extent of the available literature and of the personal experience of the author. The present volume contains 151 pages on the Arctic but only 18 on the Antarctic. Her coverage of the available literature is not exhaustive, especially for the Antarctic, but of her 395 references 354 are Russian. This review of the major Russian papers now makes available much of the voluminous information on the Russian tundra that has never been translated and has until now been largely ignored by Western botanists.

Aleksandrova devotes the first chapter to an examination of the criteria to be used in defining her geobotanical areas. The Russian classifications for Arctic vegetation have generally been based on dominating lifeforms, for example, lichen-tundra, in contrast to the general Western usage of the degree of closedness of the vegetation. Neither of these is very satisfactory for the range of Arctic vegetation, and this has caused Aleksandrova to use a complex of *features* including the composition and characteristic structure of synusia together with the lifeforms of dominant species. This has allowed her to propose in chapters two and three a far more detailed classification of vegetation types within her tundra and polar desert regions than has previously been attempted for the whole of the Arctic. Notable exclusions in the area covered are the southern tip of Greenland and Iceland. Although her classification scheme will not suit all requirements, it is an important attempt at synthesis for what is often unjustly thought of as a homogeneous ecosystem.

The treatment of the Antarctic and sub-Antarctic vegetation in chapter four is not as satisfactory. In spite of the much more limited literature, the major paper on Prince Edward and Marion Island is not referred to, nor is the major International Biological Programme Abisko symposium, which contains vegetation descriptions of many tundra sites. There are no references to vegetation descriptions for either Iles Kerguelen or Iles Crozet. She is mistaken in suggesting that no sub-Antarctic *soils* freeze below 5cm and that patterned soils are not found. The vascular flora does not show "a high degree of endemism", nor do endemic plants dominate the vegetation of all the islands. Although a large number of alien species have been recorded from these islands, the literature states quite unequivocally that the majority have not survived. Accepting her contention that there is no Arctic region with an analogous flora, there are other areas within the Southern Hemisphere, for example, Gough Island and the Auckland Islands, which carry similar vegetation *types* but are not mentioned. The remainder of the Antarctic she classifies as analogous to the northern polar desert, and divides it into northern and southern sub-regions; her treatment here is brief but reasonably inclusive.

The final chapter of conclusions is too short. Far more could be made of the data she presents, especially by the use of more diagrams.

Some of the maps are on too small a scale for their details to be clear, there is no list of illustrations, and a short glossary would have been useful. On the positive side the translation is good, misprints are very few, and the indexes are comprehensive. *Despite* the drawbacks mentioned above, Professor Aleksandrova is to be congratulated on making a good attempt at providing the first comprehensive synthesis of the vegetation of the polar regions. She has identified areas with inadequate data, provided a conceptual framework, and made available much previously unused Russian literature. An important book both for the polar botanist and the general phytosociologist.

D. W. H. Walton

D. W. H. Walton is a principal scientific officer with the British Antarctic Survey in Cambridge.

BOOKS

Primroses, people or penguins

Evolution in Age-structured Populations
by Brian Charlesworth
Cambridge University Press, £18.00 and £5.95
ISBN 0 521 23045 4 and 29786 9

The general reader can be forgiven for asking why, if evolution is so well understood, is it necessary for biologists to continue to write so much about it? There are two principal reasons. The first is that nature is wonderfully subtle, the second that there are still a number of important, unsolved problems lurking behind the established principles. Some arise from the observations of curious naturalists, who see phenomena difficult to explain within the existing theoretical framework. Others arise by deduction in the minds of inquiring theoreticians: the present book belongs firmly in this latter category.

Populations of most species of organisms are age-structured: that is there are several, overlapping cohorts whose life-styles depend upon their ages. Young and old oak trees share a forest, but grow and die at very different rates, and need to be a particular size before they reproduce. It does not matter whether we are dealing with primroses, people or penguins—most populations are age-structured. Surprisingly, there have been no previous attempts to review the ecological, genetical and evolutionary consequences of age-structure in a coherent way. There is a large scattered and growing literature, but no synthesis. Brian Charlesworth's book is therefore unique.

The age-structure of a population influences important theoretical phenomena (genetic drift and evolution of optimal life-history characteristics, for example), as well as having a direct bearing on practical problems in plant and animal breeding. The whole question of why organisms age is but one facet of the broad sweep of problems subsumed by the title of this book. The main point of it is to ask: what happens if we insert age-structure into theoretical models of population dynamics, population genetics and evolution? What new predictions emerge? What old ones fall? And to a lesser extent, how well do the models stand up to empirical tests?

Chapter one is a general survey of the basic mathematical theory of age-structured populations — a primer to modern population dynamics. It considers what types of models are appropriate for what sorts of populations, life-tables in theory and practice, the concept of "reproductive value", density-dependence, stable age-distributions, and so on. The coverage is rigorous and comprehensive, setting the context of the book very firmly in the dynamics of single species populations.

Genetics enters in chapter two, with a consideration of the effects of age-structure on Hardy-Weinberg equilibria, and on exploration of the effects of genetic drift on populations of finite size. This chapter finishes by an excursion into the intriguing problem of the chances of close relatives marrying in a human population.

Chapters three and four move on to consider the theory of gene-frequency change and equilibrium under natural selection—the core of evolutionary theory — in age-structured populations. As hoped for, some of the results strike at the foundations! For example, the concept of "fitness", which all biologists use so freely, proves a will-o'-the-wisp when measured rigorously under different assumptions. Indeed, I think this insight is the most important and worrying one in the whole book. Almost as important are Charlesworth's comments on the maximization of total population size under selection, where results can again be counter-intuitive.

Finally, chapter five looks at the evolution of life-histories; for example, why do some species breed once and then die (eels, for example) and others many times? This chapter also deals with the general problem of senescence.

I had to work hard and think hard to get through many sections, and some will require, and repay, more detailed study. The book assumes a sound working knowledge of the basic principles of population biology and genetics, and of the mathematics of matrix algebra, finite difference equations and calculus. It will not be accessible to most general readers or naturalists, despite what it says on the dust-jacket; I also think it is too advanced for an undergraduate text. In other words, it is very definitely a book for postgraduate students and research workers.

How important is it? I suspect that part of the intellectual attraction of theoretical population genetics rests upon the abstract beauty of the mathematical proofs. But one sometimes has to use extremely sophisticated techniques to solve rather restricted problems. For example, if age-structure effects in single species populations are almost always swamped in the real world by the vagaries of the environment, interactions with other populations, and shifting, unpredictable selection coefficients, then the edifice is elegant but fragile.

However, this is not a criticism, as we do not know whether these things happen. The whole point of good theoretical science is to identify clearly a set of problems, pose them in a soluble way, and leave the world to argue about the results! By focusing so admirably upon one aspect of evolution, Brian Charlesworth has written a book that will provide food for thought and debate for years to come. One cannot really ask for any more.

John H. Lawton

John H. Lawton is senior lecturer in ecology at the University of York.

Male red squirrel. Illustration taken from Squirrels in Britain reviewed on the facing page.

Small mammal ecology

Ecology of Small Mammals
edited by D. M. Stoddart
Chapman & Hall, £15.00
ISBN 0 412 14790 4

Dr Stoddart has brought together an impressive set of authors to write on eight different aspects of small mammal ecology. The book has little direct competition and will make a useful complementary text to the International Biological Programme volume on *Small Mammals: their productivity and population dynamics*, edited by Golley, Petrusewicz and Ryszkowski (Cambridge University Press, 1975). It should also become a basic text for many undergraduate courses which include mammal ecology, as students will find it generally easy to read and it gives much of the theoretical background to the subject.

Six chapters are devoted to particular aspects of pure and applied ecology and a further two chapters cover the ecology of bats and small marsupials. At first sight it seems odd that the two chapters on bats and small marsupials have been married to the other six, as these have a general coverage of species, including bats but not marsupials. However, these two chapters on particular taxonomic groups serve to emphasize the importance of those groups which are all too often set aside by the rodent-orientated student of small mammals.

The editor acknowledges that the decision to limit "small" mammals to those weighing 5 kilograms or less is an arbitrary one and he states that the guillotine has not been allowed to separate a large mammal from several small cousins. Indeed Dr Southern, in his chapter, allows himself the luxury of avian examples (with apologies) to emphasize his argument and there is much in the book which would be of interest to the ecologist.

The most generally applicable chapter, in terms of relevance to species other than small mammals, is the first, on life-history strategies. T. H. Fleming provides a succinct account of the evolution of these strategies (a strategy being defined as a "a suite of adaptive responses that a species accumulates over evolutionary time"), acknowledging individual, kin and group selection. He then reviews the demographic components of life-history strategies, giving theory and specific examples. The pattern of theory followed by empirical data is repeated in a consideration of the evolution of food habits and food niche breadth, the evolution of energy metabolism (homoiothermy versus heterothermy), and the evolution of habitat selection and social organization. Fleming recognizes that "life-history" is conventionally only the demographic characteristics of a species but manages to convince the reader that the physical, energetic and social environment should also be considered. The style is authoritative and the reader is left with a clear picture of the possible life-style options open to be exploited.

Southern's chapters on population processes and the stability and instability of small mammal populations are more relaxed in style but just as absorbing as the first. It is refreshing to read an up-to-date discussion of small mammal population ecology written by someone who can see the wood from the trees and who is not biased towards his own pet theory.

G. F. Hayward and J. Phillipson provide a more pithy and complex exposition of the functional role of small mammals and include species composition, species diversity, relationships between vegetation and primary consumers, their role as prey and their energy budgets. Perhaps the most surprising conclusion is that "consumption *per se* represents a negligible part of the impact of small mammals on ecosystems and that the greatest impact lies in the indirect feedbacks such as burrowing and trampling". It is to be hoped that this statement will stimulate new research.

The chapter on small mammals as reservoirs of disease by R. E. G. Cox includes a brief description of many small mammal zoonoses (diseases and infections which are naturally transmitted between vertebrate animals and man), their epidemiology and their control—in only half the space allotted to many of the other contributors. The author should be congratulated on packing so much into so small a space, in which he also provides a guide to the literature and relevant bibliographies. A. Myllimäki also prefers to illustrate the topic of small mammal pest problems and their control rather than give a comprehensive reference list; again good use is made of references to review articles.

J. Gaisler's chapter on bat ecology includes habitat requirements, foraging strategies, hibernation, diet, reproduction, population ecology and community ecology. The chapter is very instructive but I found the diversion into formulae before Table 7.6 difficult and disappointing. This table gives the results of applying these Lincoln Index and Life Table formulae to a bat population; but unfortunately many of the figures are inaccurate.

The final chapter on small marsupial ecology by C. H. Tyndale-Biscoe is more unconventional in its content, the author keeping the reader's attention by the novelty of the text rather than by its continuity.

Although the book is generally sound I must point out some minor errors and inconsistencies which detract from its usefulness as a teaching text. Most important are the inconsistencies between and within the life table data given in Tables 1.1 and 2.5. The tables are taken from the same squirrel study but the survivorship series start from different bases (1,000 and 1.0). This is excusable, but there are also many inaccuracies in the death rate columns of both tables.

J. R. Flowerdew

J. R. Flowerdew is lecturer in the department of applied biology at the University of Cambridge.

BOOKS

Pleasingly acrobatic visitors

Squirrels in Britain
by Keith Laidler
David & Charles, £6.95
ISBN 0 7153 7825 2

For many suburban dwellers a grey squirrel pilfering scraps from the bird-table is a pleasingly acrobatic visitor, although one whose agility is shadowed by the sneaking suspicion that this immigrant from America has played some nefarious role in the demise of our native red squirrel. But behind the scampering antics of each squirrel is a network of subtle adaptations through which evolution has groomed it for survival: squirrels use their scissor-like lower incisor teeth to crack nuts, send messages to each other with a semaphore of thrashing tails punctuated by stomping feet, and eat about two million pine-seeds each every year! These and other adaptations are the material of Keith Laidler's book.

The 13 chapters and four appendices embrace diverse topics, spanning biologists' voyeuristic glimpses of an arboreal family life, through the story of curious whims that led to a fashion for introducing and fostering the grey squirrel in the English countryside in the early twentieth century, and on to the sometimes strained relationship between man and squirrel today. Foresters fight to reduce squirrel damage in the form of bark-stripping in plantations; the squirrels are reputedly foraging for nutrients in the plant's vascular system when they strip the bark from trees in their commercial prime. Indeed, the reputation of various species of squirrel is pretty tarnished today—ground squirrels in Russia are a pest of cereal crops and retaliation in the form of seeds laced with poison apparently accounts for 150 million of the pilferers annually.

There is no doubt that among the pages of this book there are intriguing observations and some provocative explanations. One might puzzle, for instance, on the intricacies of squirrel society that are reflected by the mating chases during which as many as 30 males may stream through a woodland in pursuit of a single receptive female. The four pages of bibliography to the book indicate that much of squirrel behaviour has fallen under scientific scrutiny; nevertheless, having read the text, I did not feel any nearer to getting inside a squirrel's skin. Perhaps the absence of any citations in the bibliography to work by the author himself on squirrels underlies the rather anonymous feel to the book.

This book is not one which presents the insights of a naturalist's personal observations; indeed, there is little evidence from the text that the author has ever done anything much more intimate with a squirrel than to write about it. However, the author has done a reasonably thorough review of the literature and has clearly made a serious attempt to do so in a style that anyone can follow. The book is illustrated by colour and black-and-white photographs and by line drawings.

But what of that Anglo-American discord between red and grey squirrels? The story is both interesting and heuristic, and might be noted by those who still suffer the same burning desire to introduce new species to our fauna that brought us the grey squirrel. Laidler describes how, in 1890, the ninth Duke of Beaufort released 10 grey squirrels at Woburn Abbey. By 1920 their descendants had populated 1,350 square miles. And as the greys spread, so the reds fled, and there is some evidence of direct cause and effect in this. However, no single hypothesis adequately explains the reduction in the range of the red squirrel; it seems likely that many factors conspired together and that some of these had nothing to do with grey squirrels—among them, in the author's view, is the effect of chemical sprays on the fertility of female red squirrels.

Irrespective of its effect on its ecological competitors, the grey squirrel was accorded daunting properties in its native America, among which Laidler quotes one, "to keep a baby from having serious trouble cutting its teeth, rub its gums with the brains of a squirrel". That, at least, is one theory which seems unlikely to be refuted or proven in the near future.

D. W. Macdonald

D. W. Macdonald is a research fellow in the department of zoology at the University of Oxford.

For honest labour made

Hands
by John Napier
Allen & Unwin, £12.50
ISBN 0 04 611 004 6

Giant Panda's hand showing false thumb, used for clutching bamboo shoots while feeding. This rather special case of polydactylism was first demonstrated in 1942 by Wood Jones, who showed using X-rays that the panda's "thumb" is simply an enormously enlarged wrist bone called the radial sesamoid. The thumb is capable of restricted and very simple movements. Original line drawing from the Field Museum of Natural History, Chicago, taken from Hands.

This is a work intended both for scientists and non-scientists, and as such would run the risk both of frustrating the specialist and baffling the layman. By and large, however, Professor Napier manages to provide a successful compromise between complexity and over-simplification, due in no small measure to a lively and witty style of writing. Indeed, the book is well seasoned with humour and I found myself laughing out loud at several points in the text. Another major attraction which will find favour with many readers is the use of more than 50 illustrations, including many excellent and informative photographs, some photocopies of famous works of art and a number of original line drawings.

The work is in two sections, part one being largely structural and functional, comparative and evolutionary in content, whereas part two deals more with socio-cultural matters. Although most of the first half of the book is thus distinctly biological in flavour the second half follows on naturally enough with chapters on handedness in man and the other primates, on the details of fingerprints and their forensic significance, and on gestures and other forms of manual communication.

After short but adequate attention to terminology, chapter two continues with an account of the digits and digital formulae, giving due acknowledgement of the classical writings of Wood Jones. Following a comparison of the phalangeal formulae of human and ancestral fossil amphibian hands and other argument, the author is constrained to say of the thumb: "Indeed it is questionable whether it has ever possessed more than two phalanges, a conclusion which will no doubt infuriate the legions of anatomists who collectively have expended much time and energy trying to determine whether the missing element of the thumb is a phalanx or a metacarpal". Although it is clear that the latter part of this statement could have been better put, it is not clear why Napier does not provide further comment on the comparability between pollex and hallux in the manner of their ossification and the conformity of this to the phalangeal pattern; in other words it is curious that he does not enlarge upon the facts of the case before giving his ruling. But later in the same chapter he shows excellent turns of phrase in a number of places, as when describing palmar skin flexures as "hinges which open and close" and again in the analogy to "treads on an automobile tyre" in referring to the skin papillary ridges. However, the statement—"nails are the barometers of ill health"—is not only alarmist but is, as the author must know, a gross clinical exaggeration.

Catering as he does for a varied readership one can appreciate the author's dilemma in dealing with the internal anatomy of the hand, especially the soft parts. Inevitably the account is incomplete, as is the labelling of the hand dissections on pages 62 and 63. In spite of these anatomical deficiencies a very good functional concept of the hand emerges, although I could see little point in separating the discourse on the thumb into a subsection—"Movements of the Thumb", in chapter two—from another subsection — "Opposition", in chapter three.

As Napier has already contributed much to our knowledge of upper limb function, it is not surprising that those parts of the book dealing with prehensile and non-prehensile movements in both evolutionary and contemporary terms are particularly informative. The discourse on grips should be required reading for all manual tool designers! None the less, such a sentence as—"The ulnar nerve supplies the bulk of the power grip to muscles and can be referred to as the nerve of power"—will strike anatomists and physiologists as disturbingly imprecise.

With proper reference to Dart, the Leakeys, Tobias and other distinguished anthropologists, Professor Napier speaks with authority on the antiquity of man and, as he puts it, "the human club" with special, but not exclusive, reference to the limbs, and he continues in chapter five on the subjects of tool-using and tool-making as they refer to primate evolution and particularly to early man. I wish that the author, having made the point that tool-making skill is a product of both hand and brain, had enlarged upon this cerebral projection by pointing out that the specific areas of cerebral cortex devoted to sensory reception from, and motor innervation to, the hand and particularly the thumb are extraordinarily large in the primates and especially so in man.

The book is rounded off by an amusing chapter on gestures as accompaniments of the spoken word and of other forms of expression and communication. There is a particularly attractive drawing of Bushman hand gestures used for noiselessly communicating the identity of the quarry during hunting excursions.

When one remembers that the author is not only doctor, anatomist, teacher and primatologist extraordinary, but also a member of the Magic Circle, one can readily understand how he has succeeded in writing such a wide-ranging book.

J. D. Lever

J. D. Lever is professor of anatomy at University College, Cardiff.

BOOKS

Before the mathematical era of biology

Evolution for Naturalists : the simple principles and complex reality
by Philip J. Darlington
Wiley, £12.25
ISBN 0 471 04783 X

Darwin, second edition
edited by Philip Appleman
Norton, £3.75
ISBN 0 393 95009 3

Darwin did two things for biology in the *Origin of Species*; he built a framework on which to hang and link an enormous array of observations, and he provided an interdependent coherence for a clutch of disciplines as distinct in their methodology and language as palaeontology, molecular biochemistry, environmental physiology and the mathematics of populations.

It is the former which normally springs to mind when we think of post-Darwinian biology. Samuel Coleridge died in 1834 (while Darwin was sailing round the world in the *Beagle*), concerned that zoology was in danger of falling apart because of its huge mass of uncoordinated factual information; four years later Darwin read Malthus's *Essay on the Principle of Population* and connected his own observations on variation with the idea of a struggle for existence. He wrote to Hooker at that time, "I was so struck with the distribution of the Galapogos organisms, etc, etc, and with the character of the American fossil mammifers, etc, etc, that I determined to collect blindly every sort of fact which could bear in any way on what are species. I have read heaps of agricultural and horticultural books and have never ceased collecting facts. At last gleams of light have come, and I am convinced (quite contrary to the opinion I started with) that spectes are not (it is like confessing a murder) immutable". In June, 1842, Darwin allowed himself "the satisfaction of writing a brief abstract of my theory in pencil in thirty-five pages".

But the "other" and perhaps greater Darwinian achievement in biology has been to bring academic rigour to component disciplines. This emerges lo o negative way from Darlington's *Evolution for Naturalists*. Darlington is e distinguished biogeographer, retired from a chair of zoology at Harvard. He says of himself that his "formal education was completed in 1931, before the mathematical era of biology had well begun, and long before the explosive evolution of molecular biology". He writes: "The biologist with the best perspective on evolution as a whole is, I think, the naturalist who looke directly at what is going on in the woods, fields, and waters around him, provided he keeps up reasonably well with at least the general trend of new discoveries and theoretical advances at all levels from molecular genetics to the theory of faunal equilibriums. My method is primarily the naturalist's ! whenever I can, I shall derive and test hypotheses and models of evolution by what can see, or think I see, in the real world. . ."

This approeeh of Darlington's ie the freshness of his book, but ot the same. time its weakneue. It is pleasant to get away from models of population dynemics, arguments about species function, descriptions of selective forces, and the like, which moke up so much of books and courses on evolutioo, but it ie nnue the lées strangely unsatisfying. Dorlington views (for exemple) group selection from the viewpoint of an observer, rather like Wynne-Edwards did in his *Animal Dispersion in Relation to Social Behaviour* (1962). He is clearly aware of much of the controversy nn the subject over this past 20 years, oud correct to judge that it has been "ignored, misunderstood, or over-emphasized by different evolutionists", but on shaky ground to claim that it is "important in itself and doubly important because it is important in mèn". Sietements like tbis need to be very corefully supported, much better than "A few examples of deme-group replacemente have been described formally. . . . Observaon naturalists see . . . continual small-scale extinctions and replacements of locol populations . . . ".

To be fair to Darlington, he refers to previous papers of his own where these ideas are developed more fully, but the omission of quantitotive and analytical examinations in examples like this meke one realise the valus they have in the totality of biology. This is why Darwin's contribution to biology was much more than providing a tidy filing system for animals and plants. Darwin wae e nsturelist in the highest sense of the word, but as a by-product of his evolutionary writings, he set in motion an examination of the natural world which has encompassed the methods of mathematicians and chemists as well as those of taxonomists and geneticists.

However, an outing with a good naturalist is always a stimulating experience, and Darlington is no exception. For example, he points out that palaeontological discontinuities may represent real breaks in speciee distribution, and not merely artefacts of preservation, and inveighs against the unrealistic habit of theoreticians of assuming that adaptations (such as particular reproductive strategies or feeding behaviours) are inevitably maximized—even Darwin recognized that they were often imperccise or imperfect (De Beer called this "a principle of great importance").

I enjoyed *Evolution for Naturalists*. I shall read it again sometime, because I suspect that there are some important insights in it—but they will need digging out and testing, giving one the excuse for some "real biology" in contrast to accepting or re-testing the sophisticated conclueions of one's peers.

In contrast Philip Applamon's *Darwin* represents the worthwhile end of the Americon ecademic machine. It is a well-balanced collection of extracts from Darwin's own work, his commentators, and his intellectual descendants to the present day (ranging from Richard Owen and Adam Sedgwick to Lorenz, Leakey and Chomsky). Applemon is a Victorian historian at Indiana University, and his anthology has been chosen to show the development of ideas rather than alleged milestones in evolutionary science (in contrast to a seemingly endless stream of other American collections).

The book was first published in 1970. I do not recall seeing it before in Britain, although perhaps it has been on the history shelves in bookshops. Obviously it was well-received by somebody, because it went through twelve printings in nine years. The second edition adds papers on sociobiology, the IQ debate, DNA research, primate work, and recent studies in palaeontology. It is rounded off by two essays by Appleman himself—an Epilogue to the first edition ("Darwin: on changing the mind of"), and an interpretation of the controversies continuing in the 1970s ("Darwin among the moralists"). Tha book is worth acquiring for these essays alone: writers on evolutionary history are usually either straight-forward chroniclers or humanists with an axe to grind (such as Julian Huxley or C. H. Waddington). The only British exceptions that spring to mind are Gavin De Beer, Basil Willey, and more recently James Moore (*The Post-Darwinian Controversies*, Cambridge University Press, 1979).

Appleman points out that all the biological controversies of the past decade have a long history: sociobiology and the IQ arguments are new versions of the old determinism debate; creationism is about authority; and intellectual freedom in research is at risk when restrictions are placed on DNA work. Indeed, "Darwin's theory began in controversy, and its various offspring survive in that controversy because the issues involved go to our deepest conceptions of ourselves, to our pride in our origins, to our sense of our present dignity, to our hopes for the future. Many people find it difficult to accept facts which do not patently further their self-esteem, or theories which strike them as socially retrograde. Violence aside, all of that is understandable, and perhaps, in the long run, healthy—the ferment of ideas out of which better ideas may arise. In the short run, too, the persistent controversy suggests not only hot tempers and loud mouners but also welcome evidence of moral commitment and intellectual freedom" (page 553).

The attention we pay to holism and the wider issues of life are too often confined to our lips; waiting with a naturalist and sapping with a moralist firmly grounded in biological history could be salutary for all of us.

R. J. Berry

R. J. Berry is professor of genetics at University College London.

In ultraviolet light

Biological Effects of Ultraviolet Radiation
by Walter Harm
Cambridge University Press, £15 and £4.95
ISBN 0 521 22121 8 and 29362 6

Ultraviolet radiation (UV) produces alterations in the genetic material (DNA) inside all living cells. As a consequence of these alterations to the DNA molecules UV can either kill cells or produce permanent genetic changes (mutations) in them, and it can also cause skin cancer in animals and men. UV is, of course, present in the rays of the sun, and the study of the biological effects of UV and of the way in which cells respond to damage produced by UV, is of great importance and has yielded much information concerning some of the basic processes which occur in living cells.

In this book Walter Harm attempts to provide a basic textbook for advanced students. It is very clearly written, easy to read and comprehend, and well illustrated; but the choice of topics covered is somewhat bizarre. In a book with this title the student might reasonably expect to find a substantial amount of information on the effects of UV on animals and man, instead of which there is only one very short chapter, on UV-carcinogenesis. The rest of the book describes effects of UV on microorganisms.

The first six chapters contain useful basic information for the student, on physical aspects of ultraviolet radiation and ultraviolet lamps, measurements of doses, the products formed by the action of UV on DNA, ways of assessing the biological effects of the radiation, and evidence that damage to DNA is responsible for most of the biological effects observed. In the subsequent chapters, however, unwarranted space is taken up with the description of rather obscure phenomena, many of which have only been observed in studies with bacterial viruses. The relevance of many of these phenomena, although they are of undoubted historical importance, is somewhat questionable in the light of the findings of more recent research.

The importance of repair and recovery processes is quite rightly emphasized throughout the book, yet little space is devoted to the molecular mechanisms of these processes, a topic which would surely be of interest and importance to the student. The bibliography lists mainly articles of historical interest, with no citations to articles later then 1970. Although the book is not written for research purposes, surely a few citations of recent review articles would have been useful for those readers interested in pursuing the subject in greater depth.

The paperback edition is reasonably priced and, although some of the later chapters are likely to be of dubious value, the helpful information in the first few chapters will make it a useful volume for graduate students in photobiology.

A. R. Lehmann

A. R. Lehmann is at the MRC cell mutation unit, University of Sussex.

Fundamental functions

Plant Metabolism
by H. D. Kumar and H. N. Singh
Macmillan, £4.95
ISBN 0 333 25639 7

In recent years plant metabolism and plant biochemistry have undergone a major resurgence of activity. This has necessitated a reappraisal of the teaching of these subjects to biology students and to the large numbers of students in the biological sciences who have little acquaintance with these fundamentally important aspects of modern science. Before the arrival of university level texts on these many textbooks already covering these subject areas but, in my real need is to have a modern text that will excite the interest of students because it is relevant and which the student will be likely to purchase. Increasingly, students are realizing the importance of their own small collection of readable texts, however, good may be the library facilities.

This book on plant metabolism fulfils most of the requirements. Many students find plant metabolism a difficult subject to comprehend, particularly since in many of the more general texts on metabolism and biochemistry it is relegated as secondary to animal metabolism. Plant metabolism is often presented merely as a highly complicated activity of interconnected metabolic cycles. Kumar and Singh avoid this major pitfall by relating these activities to cell structure and the major metabolic functions of plants fundamental to life—namely, photosynthesis and nitrogen metabolism with associated nitrogen fixation. Perhaps evidence that plant metabolism has truly emerged as an independent discipline is that Kumar and Singh have been able to present such a succinct account in little over 300 pages.

The style of writing is clear and straightforward, and the numerous line drawings are helpful. Having references at the end of chapters to original papers, rather than, as general review articles, is also a commendable feature in this type of book; text is demonstrates to students where the real seed corn of the subject is to be found.

Some of the chapters were based on lectures given by H. D. Kumar at various Indian Universities in 1972-73. If there is any general defect in this excellent book, it is that the text has not been updated since it was first published in India in 1976. As a consequence there is little mention, for instance, of the important recent work on the control of synthesis of fraction-1 protein, on of the important contributions of plant metabolism and biochemistry to plant genetic manipulations. For many students, however, such deficiencies will not detract from the merit of having a paperback edition of this excellent text at a price most of them can afford.

Edward C. Cocking

Edward C. Cocking is professor of botany and director of biological studies at the University of Nottingham.

BOOKS

Of meningococci and men

The Lives of a Cell: notes of a biology watcher
by Lewis Thomas
Allen Lane, £5.95
ISBN 0 7139 1350 9

The Medusa and the Snail: more notes of a biology watcher
by Lewis Thomas
Allen Lane, £5.95
ISBN 0 7139 1349 5

Lewis Thomas, paediatrician, immunologist, director of the Sloan-Kettering Institute for Cancer Research in New York, and elder statesman of the American medical establishment, wrote the essays which make up these two volumes originally as occasional pieces for the *New England Journal of Medicine*. They were directed therefore at the medical upper crust of America, but beloro long had found their way between hard covers and into the United States best-seller lists. *The Lives of a Cell* indeed received the National Book Award, from which one can draw the encouraging conclusion that science, at least when put by a literary craftsman like Thomas, can catch the imagination, rather than glaze the eye of the casual reader.

The British public, accustomed by long exposure to science writing marked (with few honourable exceptions) by a relentless and shoddy incompetence, clearly views such science as comes its way in the newspapers as no better than literary dog-biscuit. (Where but in Britain could the leading national daily report last year's Nobel Prize in chemistry, awarded for the development of irreversible thermodynamic theory, in the imperishable words: "Professor Prigogine is an expert on the chemical make-up of human beings"?) One can only hope therefore that the general reader will not deny himself these beguiling excursions through the byways of biology and medicine with a genial guide, full of arcane knowledge, shafts of originality and no end of diverting quotes and quiddities.

Thomas writes in an easy colloquial style. He descants in these essays on such matters as the future of genetic cloning; the nature of warts and their appearance (and still more mysterious evanescence); freaks of evolution; parasitism and symbiosis; the pathways of discovery in science and medicine; the deficiencies of modern medical education; on committees; on death and our attitudes towards it. An optimist by conviction, he has a penchant for etymology and an admiration for Montaigne.

Thomas is at his best when he is ruminating on the ways of nature and its aberrations; on our normally peaceful coexistence with the meningococcus; on the gratuitous evolution of the diphtheria toxin gene, which is expressed only in bacilli, sick of a phage and under the direction of the intruder; and on the weirdly intertwined careers of medusa, the jellyfish and the nudibranch snail, whose larval offspring swim into the tentacles of the adult medusa and are engulfed in its body. The jellyfish is then devoured from within by the rampaging larvae; as they mature and grow their host is trimmed down until nothing remains of it but an appendage close to the mouth of the adult snail, where in time it reproduces and generates new jellyfish. Which is then the predator and which the prey?

Such biological conundrums give Thomas keen pleasure, which communicates itself vividly to the reader. He adverts frequently to the theme of symbiosis, and views our relation with our own cellular organelles, such as our intracellular energy generators, the mitochondria (which by their biochemical attributes are the descendants of primaeval bacteria that set up home in our cells), in much the sema light. In this vein Thomas stands, to my mind, with the best science writers of recent times, such as J. B. S. Haldane in his journalistic articles and Miriam Rothschild in her incomparable *Lice, Fleas and Cuckoos*.

Those in search of social or political commitment will be disappointed. Others again may be irked by Thomas's sometimes remoreeless optimism, or his occasional flights of whimsy. Yet here he is on a subject of interest to all of us in the essay "The long bobit", the title of which is a quotation from Sir Thomas Browne: "The long habit of living indisposeth us to dying". Starting out from the conviction, based on his years of medical practice, that it is only the lung and not the dying who find death an affront, Thomas concludes

> It [dying] is after all the most ancient and fundamental of all biologic functions, with its mechanisms worked out with the same attention to detail, the same precision for the advantage of the organism, the same abundance of information for guidance through the stages, that we have long since become accustomed to finding in all the crucial acts of living. . . .

But even so, if the transformation is a coordinated, integrated physiologic process in its initial local stages, there is still that permanent vanishing of consciousness to be accounted for. Are we to be stuck forever with this problem? Where on earth does it go? Is it simply stopped dead in its tracks, lost in humus, wasted? Considering the tendency of nature to find uses for complex and intricate mechanisms, this seems to me unnatural. I prefer to think of it as somehow separated off at the filaments of its attachment and then drawn like on easy breath back into the membrane of its origin, o fresh memiery for a biospherical nervous system, but I have no data on the matter.

It is o curious fact that the cataclysmic advance of science in the past two decades has been accompanied by an ever more shameful failure on the part of its practitioners to explain their activitioe to their benefactors, the tax-paying public. There is perhops an onology here to the law enunciated by Art Buchwald, that es the economy gets better everything else gets worse—a proposition which evidently does uot commute with its converse. Our Victorian predecessors, for example, saw it by contrast as their duty and privilege to expound their discoveries and impart their pride and pleasure in them to all who would read or listen: the chasm between the two cultures had not yet been discovered.

Most of the new breed of scientists, including the very successful, are not necessarily the company one would choose to be stuck in a lift with. Lewis Thomes is lu e different tradition: ha emerges from the pages of these books as a humane and engaging companion, and when, as his enthusiasm mounts, he hooks his finger through your buttonhole and proceeds to dilate on pheromones or computers in medicine, you will have no thought to disengage yourself. Would there were more like him, for science is in sora need of him. Oscar Wilde once said that to be intelligible is to be found out. Lewis Thomes shows in these essays that this dispiriting adage admits of exceptions, and for this we are all to his debt.

Walter Gratzer

Walter Gratzer is at the MRC Biophysics Unit, King's College, London.

Deep affection for the natural world

Observations of Wildlife
by Peter Scott
Phaidon, £7.95
ISBN 0 714 820 415

Adjusted to a world of electric light and an after-dusk society, few of us see out and about at daybreak. Those we miss the pleasurable and sometimes rather smug sensation of having the world to ourselef, the refreshing chill of the dawn wind, the noisy activity of waking birds and the extraordinary colours—greens, pinks and yellows—of the new-lit sky. Those qualities of colour and of mood are captured by many of Peter Scott's paintings and, although they sell spectacularly to wildfowlers, they appeal less perhaps in the sense of ducks that are flying across them than in the sense of wildness which they bring into our warm, dry, lo-shed lives.

Observations of Wildlife comprises a handsome collection of over 100 of his works (100 reproduced in colour), spanning a period of more than 40 years. It is a reflection of the lasting attraction of his style that his most recent work shows little difference from the earliest. Yet no pleasure is individual. This place may be familiar to birdwatcher or fowler, but you can read the wind and weather from the state of the sky and guess the birds' own state of mind from their flight or stance.

Sir Peter has not confined himself to this style and subject one of the books pleasures is its inclusion of other less well known facets of his work as an artist. There are meticulous plates prepared for the *Handbook of the Birds of Europe, the Middle East and North Africa* (published by Oxford University Press), in which his work on geese and swans stands comparison with that of any other specialist bird illustrator and clearly outstrips many. There are some very crisp ink and watercolour drawings of birds, especially the elegant red-breasted geese and pages from his diaries filled with detailed sketches of oleander hawk moths, of jewel fishes, of vegetable life in Saudi Arabia, of giddy petrels in the South Pacific. How reassuring too, for less expert birders, to spot the correction made in a day's list of birds seen during a trip to Israel and realise that even Sir Peter can occasionally make a great tit with a Sardinian warbler.

The text of the book is fairly short and lightweight. He commentary by discussing how and why he paints—"I do it because I can't help doing it" and then moves on to summarize his involvement with the Wildfowl Trust from its creation in 1946 to its extensive present day operations. Turning to the wider conservation scene, he looks back in his major part in the establishment of the World Wildlife Fund, a body which has become of central importance to international nature conservation, notably in the Third World, and he looks forward to a future in which species' survival

John Andrews is head of the conservation planning department at the Royal Society for the Protection of Birds.

NOTICE BOARD

Noticeboard is compiled by Patricia Santinelli and Mila Goldie

Chairs

The University of Birmingham has appointed Professor Geoffrey Joseph Hand to the Barber chair of jurisprudence from October 1. Professor Hand has held the chair of legal and constitutional history at University College, Dublin, since 1972 and concurrently, since 1978 he has also been head of the department of law at the European University Institute, Florence. His main writings have been concerned largely with legal and constitutional history, and in particular with the history of Anglo-Irish relations since the Middle Ages.

Professor Neil Jenkins has been awarded the title of emeritus professor upon retirement on September 30, 1980, as professor and head of the department of oral physiology at the University of Birmingham's dental school.

Dr Gwyn Thomas, reader in the department of Welsh language and literature, University College of North Wales, Bangor, has been awarded a personal chair.

Richard Ross, formerly senior duty editor on BBC's Nine O'Clock News, has been appointed professor of film and television at the Royal College of Art. His appointment follows the publication of a working party report into the future of the school.

Appointments

Universities

Durham

Director of the North of England Institute for Christian Education: the Rev. Dr Jeffrey Astley.

Kent

Forthcoming events

"People and the Metropolis—contribution of voluntary groups to life in London", a one-day seminar at the Museum of London has been organized jointly by the museum and the London Voluntary Service Council which celebrates its 70th birthday this year, on October 27 between 9.30 am and 5 pm. Speakers include Mr David Eversley, fellow of the Policy Studies Institute, talking on social conditions. A discussion on "Voluntary Effort Now" will include speakers such as Professor Roger Hadley, professor of social administration at Lancaster University. Mr John Stewart, director of the Institute of Local Government Studies will speak on "Government and the People—the relation between statutory and voluntary agencies." Fee: £3.50. Tickets available from the Museum of London, London Wall, London.

* * *

The following lectures are to be held at the University of Newcastle upon Tyne: "The Territorial Dimension of Judaism", a department of religious studies special lecture by Professor W. D. Davies, George Washington Ivey Professor of advanced studies and research in Christian origins at Duke University, North Carolina, on October 27 in Room G.5, Percy Building. "Chance, Choice, and Challenges in Medical Education", an inaugural lecture by Professor James Parkhouse, professor of postgraduate medical education, on October 28 in the Curtis Auditorium of the School of Physics. "The Place of Natural Therapies in the National Health Service", a public lecture by Mr H. A. W. Forbes, consultant physician, Plymouth General Hospital, on October 30 in the Curtis Auditorium. Admission free to all events.

* * *

The following public lectures are to be held at Queen's University, Belfast: "The Revival and Decline of Russian ...

A still from The Lost Honour of Katherina Blum which can be seen today at 7.45 pm at the School of Adult and Social Studies, Goldsmiths College, University of London, New Cross, London, SE14. The screening is part of a weekend programme on The New German Cinema being run by the school in association with the adult education officer of the British Film Institute.

"Recent Trends in British Politics", a day school for teachers, is to be held at Kingston Polytechnic on November 1. The aim of the school is to provide information on recent trends in the political system as well as a forum for discussion. Speakers include Professor Bernard Crick, department of politics and sociology, Birkbeck College, and Mr Jim Nugent, principal lecturer in economics, Kingston Polytechnic. Further details from Dr Anne Showstack, School of Economics and Politics, Kingston Polytechnic, Penrhyn Road, Kingston-upon-Thames.

* * *

"Company Law in the 80s" a half day conference arranged by the faculty of law of Queen's University, Belfast is to be held on November 8 between 9.30 to 12.30 am in Room 101, Social Sciences Building in the university. Speakers include Mr S. Hornsey, ...

Cruickshank, currently chairman of the Festival Fringe Society on November 5 at 5.15 pm in the same room as above. Both lectures are open to the public.

* * *

A call for papers for the seventh international conference on "Improving University Teaching" which is to be held on July 15-18 at the University of Tsukuba, Japan has been issued by the University of Maryland University College. Papers and proposals for seminars, workshops and exhibits on topics in the following areas are invited: Reexamining the goals and functions of higher education, developing and evaluating curriculums and their technology, understanding, facilitating and evaluating learning and enhancing and evaluating teaching performance. These should be sent by February 1 to Improving University Teaching ...

Mrs Shirley Williams, former secretary of state for education and science ...

Grants

Recent publications

ANNOUNCEMENTS

THE SOCIAL VISION OF ALFRED ADLER

Open University programmes October 25 to October 31

Classified Advertisements

To place your advertisements write to:
The Advertisement Manager, The Times Higher Education Supplement, P.O. Box 7, New Printing House Square, Gray's Inn Road, London WC1X 8EZ.
Tel. 01-837 1234.

Index

Rates:
Classified Display—£7.25 pscc
Minimum size: 9cm × 1 col @ £65.25
Classified Linage—£1.40 per line
Minimum 3 lines—@ £4.20
Box number—£2.00

Copy deadlines:
Classified Display: Friday in the week prior to publication
Classified Linage: Monday 10.00 am in the week of publication

Universities

THE OPEN UNIVERSITY
READVERTISEMENT

The Council of the Open University invites applications, from men or women, for the post of

SECRETARY OF THE UNIVERSITY

The Secretary is responsible for the administration of the University, subject to the direction of the Vice-Chancellor. The University has a full-time staff of some 2,500 and approximately 80,000 students and operates throughout the United Kingdom through thirteen regions.
The appointment will be made on UAP Grade IV. The initial salary is likely to be above £20,000 a year.
Further particulars of the post may be obtained from the Acting Vice-Chancellor, The Open University, Walton Hall, Milton Keynes, MK7 6AA, to whom applications should be sent in confidence by 28th November, 1980.
Previous applicants need not re-apply but are asked to confirm their continuing interest by letter.

BELFAST
The Queen's University
LECTURESHIPS

UNIVERSITY OF DUBLIN Trinity College
LECTURER/MANAGER
STATISTICS AND OPERATIONS RESEARCH LABORATORY

BATH
THE UNIVERSITY
SCHOOL OF PHARMACY & PHARMACOLOGY
PROFESSOR OF PHARMACEUTICS

GLASGOW
THE UNIVERSITY
POLYMER RHEOLOGY: POST-DOCTORAL RESEARCH

KENYATTA UNIVERSITY COLLEGE

PAPUA NEW GUINEA
Institute of Applied Social and Economic Research
wishes to appoint a
DIRECTOR

UNIVERSITY COLLEGE OF SWAZILAND

UWIST University of Wales
WELSH SCHOOL OF PHARMACY
MEDICINES RESEARCH UNIT
INFORMATION OFFICER

HONG KONG
THE UNIVERSITY

CAMBRIDGE

CARDIFF

DURHAM

KEELE

Polytechuics continued

DUNDEE COLLEGE OF TECHNOLOGY
Department of Mathematics and Computer Studies

Lectureship and Mathematics

The person appointed will have an active interest and research record in the applications of mathematics to physical and/or business problems.
Salary on the Lectureship (A) scale viz. £8,905-£10,434 (BAR)-£11,207 with initial placing depending upon approved previous experience.
Further particulars and application forms may be obtained from the Personnel Officer, Dundee College of Technology, Bell Street, Dundee DD1 1HG, with whom applications should be lodged not later than Monday 10 November 1980.

Colleges of Higher Education

Buckinghamshire County Council Education Department

Buckinghamshire College of Higher Education
Queen Alexandra Road, High Wycombe, Buckinghamshire HP11 2JZ
Director: D. J. Everett BA FFTCom
School of Engineering

Senior Lecturer Microprocessing

Salary scale: Senior Lecturer £8,952-£11,295

To teach on and help organise courses in microprocessor applications.
Candidates must be academically qualified and have had industrial experience in this field. Some previous teaching practice is also desirable.
The successful applicant will be required to take up appointment as soon as possible.
Removal allowance may be paid in approved cases.
Lodging allowance available in appropriate circumstances.
Application form and further details from the Assistant Director, to whom application forms should be returned.
Please enclose s.a.e.

Hull College of Higher Education
RESEARCH ASSISTANT

DORSET INSTITUTE OF HIGHER EDUCATION
DEPARTMENT OF TECHNOLOGY
Requires
Lecturer II/Senior Lecturer in Electronics/Micro Processor applications
Department of Science and Mathematics requires
Lecturer II/Senior Lecturer in Mathematics

WINCHESTER
KING ALFRED'S COLLEGE

Librarians

DURHAM
THE UNIVERSITY

Colleges of Further Education

DURHAM COUNTY COUNCIL
NEW COLLEGE DURHAM
(GROUP 8)
POST OF

DEPUTY PRINCIPAL

Applications are invited from suitably qualified and experienced candidates for the above post which will become vacant on 31st December, 1980.
New College Durham was established on 1st September, 1977, as the result of a merger of the Durham Technical College and Neville's Cross College of Education. It provides a very wide range of courses as a community college and is continuing to diversify its Higher Education.
The College has been placed in Group 8 under the Burnham Further Education Committee's Report. The salary attached to the post will be at a fixed point within the range for a Group 8 Vice-Principal, currently £18,880 per annum.
A good Honours graduate is looked for with sound and wide experience in Further Education and proven administrative ability in a senior post in education. This is a challenging and rewarding appointment.
Further particulars may be obtained from the Principal, New College, Durham, Framwellgate Moor Centre, Durham, on receipt of a stamped addressed envelope.
The closing date for applications is Friday 14th November, 1980.

MANCHESTER
ROYAL NORTHERN COLLEGE OF MUSIC
1981 ENTRY

Applications are invited for entry in September 1981. The main programme of auditions will take place in the period February to April 1981. For those requiring an early decision, some auditions will be held in the week commencing 15th December 1980 and immediate application for these is necessary.
Details and application forms are available from Secretary for Admissions, Royal Northern College of Music, 124 Oxford Road, Manchester M13 9RD (061-273 6283).

SURREY
Guildford
THE GUILDFORD SCHOOL OF ACTING AND DANCING
Applications are invited for the post of PRINCIPAL from the beginning of the Autumn Term 1981. The appointment in the first instance will be for 5 years. Preference within the age group 30 to 60. Starting salary not less than £7,500.
Further particulars from the Secretary to the Board, Rollers Centre, Guildford, Surrey GU1 3UT. Applications must be submitted by October 27, 1980.

Research

LIVERPOOL
THE UNIVERSITY
DEPARTMENT OF ELECTRICAL ENGINEERING AND ELECTRONICS

Applications are invited for the post of SENIOR RESEARCH ASSISTANT for work concerned with obtaining fundamental property information about high voltage switchgear arcs using a data acquisition system based upon a PDP11 minicomputer system. The work is being conducted in collaboration with industry.
Candidates should have or expect to obtain shortly a PhD degree. Previous experience with digital data acquisition techniques or experimental techniques of aerodynamics, gas discharges or switchgear engineering would be helpful, but not essential.
Initial salary on the scale £5,505 to £5,985 per annum.
Further particulars and application forms may be obtained from The Registrar, The University, PO Box 147, Liverpool L69 3BX, by whom completed forms should be received not later than November 20, 1980. Quote ref. RV/805/THES.

LONDON, S.E.18
THAMES POLYTECHNIC
RESEARCH POSTS
SCHOOL OF CIVIL ENGINEERING
Applicants should hold a good honours degree. The work, which is in the hydraulics field and can lead to a higher degree, includes

Research Posts

PLYMOUTH POLYTECHNIC
Faculty of Social Science
Department of Social and Political Studies

RESEARCH ASSISTANT SOCIOLOGY

WOLVERHAMPTON
THE POLYTECHNIC
RESEARCH ASSISTANT
SOCIAL SCIENCE

BRIGHTON
THE POLYTECHNIC
DEPARTMENT OF PHARMACY
RESEARCH TECHNICIAN

Overseas

MOZAMBIQUE
CENTRE OF AFRICAN STUDIES
EDUARDO MONDLANE UNIVERSITY
MAPUTO

THE NEW SOUTH WALES INSTITUTE OF TECHNOLOGY
SYDNEY, AUSTRALIA

The New South Wales Institute of Technology is established to provide a wide range of courses for those entering or already employed in industry, government and technological fields.

FACULTY OF BUSINESS STUDIES

The Faculty of Business Studies offers courses at both the undergraduate and graduate levels. The Schools of Accounting, Business and Public Administration, Finance and Economics, and Marketing all participate in offering the Bachelor of Business course and a number of Graduate Diplomas are offered. It is intended that the graduate programme will be enlarged with the introduction of an M.B.A. course, possibly in 1981. The student body in the Faculty of Business Studies numbers some 2,600.

PRINCIPAL LECTURER
SCHOOL OF ACCOUNTING

The School of Accounting is responsible for the general conduct of the Accounting concentration in the Bachelor of Business degree course, and also for teaching accounting (and business law) subjects across all the concentrations in that course. The school is similarly responsible for teaching relevant subjects within the graduate diploma programme and in the proposed M.B.A. course. Three broad disciplinary areas are presently identified within the School—Financial Accounting and Auditing, Management Accounting and Systems, and Business Law. The Principal Lecturer will be expected to provide academic leadership in one of the accounting disciplinary areas and to accept responsibility for administration in defined areas, consistent with the overall policies of the School and of the Faculty. This would involve active participation in, and encouragement of, such matters as teaching and further development of subjects in the undergraduate course and the graduate programme, research of an applied nature, co-operation with professional organisations, and the development and conduct of courses for practitioners.
Applicants will have an appropriate higher degree; experience and accomplishment in tertiary education; business, government or public practice are highly desirable.

PRINCIPAL LECTURER IN COMPUTER SCIENCES
SCHOOL OF COMPUTING SCIENCES
FACULTY OF MATHEMATICAL AND COMPUTING SCIENCES

The School offers a bachelor's degree in Computing Science, a post-graduate diploma in Data Processing, and a Master's Degree by Research and Thesis. It is planned to introduce a Master's Degree in Information Science by course work in 1981.
The School has a number of laboratories and a PRIME 550 Computer. The Computer Centre is currently proceeding with the installation of a large Honeywell network which will include a Level 66, five Level 6 computers and some 200 terminals. The School is active in research and consulting to industry.
The current academic establishment is 37 staff, divided into four specialist Units: Computing Systems, Information Systems, Computing Methods and Business Computing. The Principal Lecturer would also be appointed as Head of the Department of Computer Science for a period of three years in the first place. This Department would comprise the two Units of Computing Methods and Computing Systems.
Computing Systems includes systems architecture, operating systems, languages and processors, performance evaluation, and microprocessors.
Computing Methods concentrates on two areas, the teaching of programming techniques, and on advanced applications such as artificial intelligence, computer graphics and theoretical computer science.
The successful applicant will have a doctoral degree and will have demonstrated leadership in one of the above fields. The Principal Lecturer will have a major role in the planning of this rapidly developing School and will be given specific responsibility for certain aspects of its administration.

CONDITIONS OF EMPLOYMENT

Salary is within the following range:
Principal Lecturer: $A29,012 : $A30,192 : $A31,369 p.a.
Fares and a contribution towards removal and initial accommodation expenses are provided for overseas appointees. A Housing Loan Scheme is also available.
With consent of Council academic staff are permitted to undertake limited consulting work.
Applications close on November 28th 1980. Applicants should arrange for three confidential referees' reports to arrive by the same date. Written applications should include: address, telephone number; personal particulars; evidence of qualifications; publications; research work undertaken and the names and addresses of the referees contacted. Applications and referees' reports are to be sent to: The Official Secretary, N.S.W. Government Offices, 66 Strand, London WC2N 5LZ.

THE UNIVERSITY OF NEW ENGLAND

Senior Lecturer
(Tenured)
Accounting and Financial Management

The Department of Accounting and Financial Management is in its second decade and is one of the University's largest growth areas. Undergraduate and postgraduate courses are offered to internal and external students in Accounting, Finance, Systems, Legal Studies and Small Business Management. Degrees include Bachelor of Financial Administration, Diploma in Financial Management, Master of Economics and Ph.D.

Owing to postgraduate expansion, the University seeks to appoint a Senior Lecturer who holds a Doctorate, possesses sound experience in teaching and research and is a member of an appropriate professional association. The incumbent would be expected to conduct Doctoral and Masters supervision and head academic projects leading to scholarly publications. Opportunity exists for research grants and travel within Australia.

Informal enquiries may be made to the Acting Head of the Department.

The University of New England, located in an aesthetic "Oxford/Cambridge" rural setting in northern New South Wales, recently celebrated its silver jubilee. It is the only Australian University not in a large city but is truly national in its student body of approximately 8,000.

SALARY: $A23,591—$27,741.

CLOSING DATE: 30th November, 1980.

POSITION NO.: 599.

Other conditions include assistance with travel and removal expenses, superannuation, assistance with initial accommodation and with building or buying a house in Armidale.

A comprehensive curriculum vitae, names and addresses of three senior academic referees, and reference to the Position Number should be sent prior to the closing date to the Staff Officer, The University of New England, Armidale, New South Wales, 2351, Australia.

ARMIDALE N.S.W. 2351, AUSTRALIA.

Overseas continued

THE UNIVERSITY OF NEW ENGLAND
New South Wales

LECTURESHIP IN MEDIEVAL HISTORY
(Tenured)

Applicants should have a postgraduate degree and teaching experience in any field of Medieval History. The Department offers courses in the origins of Ireland, England and France to Circa 800 and in the Viking Era. The appointee may be required initially to assist in these courses, to develop courses preferably in the period of the high or later Middle Ages, or to assist in a proposed general Medieval Course.
Informal enquiries may be made to G. R. Quaife, Telephone (067) 72 2911 Extension 2066.
Salary: $17,739-$23,303
Closing date: 21st November, 1980
Position No. 598
Applications, including the names and addresses of three referees and stating the position number should be sent to the Staff Officer, The University of New England, Armidale, New South Wales, 2351 prior to the closing date.

LECTURESHIP IN AUSTRALIAN HISTORY
(Tenured)

The Department teaches two general courses which cover the period from 1788 to the present, and a course on women and family in Australian History over the same period. It has a large number of postgraduate students pursuing research programmes. Candidates should be qualified in any aspect of Australian History and have a postgraduate degree and teaching experience. The successful applicant may be required to co-ordinate a large Undergraduate Course.
Informal enquiries may be made to G. R. Quaife, Telephone (067) 72 2911 Extension 2066.
Salary: $17,739-$23,303
Closing date: 21st November 1980
Position No. 596
Applications, including the names and addresses of three referees and stating the position number should be sent to the Staff Officer, The University of New England, Armidale, New South Wales, 2351, prior to the closing date.

LECTURESHIP IN PREHISTORIC ARCHAEOLOGY
(Tenured)

The successful applicant will be expected to teach general Prehistory and Archaeology but particularly Australian Prehistoric Archaeology and Ethnography at second and third year undergraduate levels. Preference will be given to candidates with research interests and experience in Australia, particularly if they have an interest in Prehistoric Human Ecology. Previous teaching experience in a University will be a distinct advantage and candidates are expected to have a good honours degree in Prehistoric Archaeology and a postgraduate degree. Preference will be given to those either with a Doctorate in Australian Prehistoric Archaeology or with such a Doctoral Thesis in the course of examination.
The successful candidate will be expected to take up the appointment on 1st February, 1981.
Further information may be obtained from Associate Professor G. E. Connah on telephone (067) 72 2911 extension 2145.
Salary: $17,739-$23,303
Closing date: 14th November, 1980
Position No. 904
Applications, including the names and addresses of three referees and stating the position number should be sent to the Staff Officer, The University of New England, Armidale, New South Wales, 2351, prior to the closing date.

LECTURER IN GERMAN
(Tenured)

Proven interest and ability in Language Teaching, from elementary to advanced levels, together with a higher degree (or significant work towards it) in the area of 19-20th Century German literature are the basic qualifications for the position. In addition, recent and reasonably extensive exposure to contemporary German in a German speaking country is required, and some experience in either teaching or learning in distance or part-time modes would be an advantage.
Further information may be obtained from Professor E. Marsch, telephone (067) 72 2911 extension 2025.
Salary: $17,739-$23,303
Closing date: 14th November, 1980.
Position No. 563
Applications, including the names and addresses of three referees and stating the position number should be sent to the Staff Officer, The University of New England, Armidale, New South Wales, 2351, prior to the closing date. Applicants should ask their referees to forward their reports direct to the Staff Officer.
ARMIDALE, N.S.W., 2351, Australia.

NATIONAL UNIVERSITY OF SINGAPORE

TEACHING APPOINTMENTS IN CHEMISTRY

Applications are invited for appointments ranging from Lectureships to Associate Professorships in the Department of Chemistry. Candidates should have a Ph.D. degree in Chemistry, preferably with relevant teaching/industrial experience in Applied Chemistry.

Gross annual emoluments range as follows:

Lecturer	S$22,570-S44,210
Senior Lecturer	S$36,625-S$57,305
Associate Professor	S$56,410-S76,020

The point of entry depends on the candidate's qualifications, experience and the level of appointment offered.

For staff appointed on normal contract, emplacement on the permanent establishment will be considered after two 3-year contracts. Leave and medical benefits are provided. Under the University's Academic Staff Provident Fund Scheme, the staff member contributes at the present rate of 16 per cent of his salary subject to a maximum of S$540/- p.m., and the University contributes 20 per cent of his monthly salary. (The sum standing to the staff member's credit in the Fund may be withdrawn when he leaves Singapore/Malaysia permanently). Other benefits include: a settling-in allowance of S$1,000-2,000 depending on circumstances, subsidised housing at rentals ranging from S$100-350 p.m., passage assistance and baggage allowance for transportation of personal effects to Singapore.

Candidates should write to: The Registrar, National University of Singapore, Kent Ridge, Singapore 0511, giving their curriculum vitae and also the names and addresses of three referees.

Closing date: 4 November 1980.

ADELAIDE COLLEGE OF THE ARTS AND EDUCATION, SOUTH AUSTRALIA

Applications are invited for the following positions:

PRINCIPAL LECTURER, SENIOR LECTURER IN INTERPRETING AND TRANSLATING
The Adelaide College of the Arts and Education is currently offering an Associate Diploma in Interpreting and Translating which is planned to become a full degree course from 1981.
The award is supported by major studies in Italian and Modern Greek within a Centre for Community Languages.

DUTIES:

1. Development of the B.A. Interpreting and translating award, in cooperation with other community languages staff of the college.
2. Implementation of the B.A. programme and overall responsibility for the co-ordination of the programme.
3. Lecturing responsibilities in the area of theory and practice of interpreting-translating, oral and written communication, techniques of interpreting and translating.
4. Supervision of field work.

QUALIFICATIONS:
The appointee is expected to have completed a higher degree and will have formal qualifications in interpreting and translating. A high level of competence in both written and spoken English and in either Italian or Modern Greek is required.

TERMS OF APPOINTMENT:
The appointee should be able to commence duties on December 1, 1980 or as soon as possible thereafter. The appointment may be made on a contract of 3-5 years or the appointee may be offered a tenurable position. This will be negotiated according to the requirements of the College and the appointee.

SALARY RANGES (AUSTRALIAN DOLLARS):
Principal Lecturer A$28,018.
Senior Lecturer I A$26,051-A$27,745.
Senior Lecturer II A$23,804-A$25,448.
Information is available from Dr. N. Habel, telephone (08) 223 8203.

Applications giving full details of name, address, age, qualifications and experience and the names of three referees should be forwarded to:

The Secretary, Staff and Council Services, Adelaide College of the Arts and Education, Holbrooks Road, Underdale, South Australia 5032.
Closing date November 21st 1980.

UNIVERSITY OF CAPE TOWN

Applications are invited for the following posts:

Chair of Diagnostic Radiology

Applicants for the above post, which is currently vacant should be qualified registered medical practitioners. Date of assumption of duty will be negotiated with the successful candidate.
Appointment will be made under the terms of the Joint Agreement between the University of Cape Town and the Cape Provincial Administration. It is a full-time appointment and the salary is R26,700 per annum (fixed). Under certain circumstances a non-pensionable allowance (currently R6,300 per annum) is payable by the Cape Provincial Administration. Closing date for applications is 31 December 1980.

Lecturer in Physiology

The successful applicant for the above post, vacant from 12 February 1981, will take part in the teaching of medical, paramedical, and science students and will be expected to undertake research in a field of his choice. Appointment will be made according to qualifications and experience on the salary scale R11,550 x 450-R12,900 x 660-R15,540 per annum. Closing date 15 November 1980.

General

Applicants for either post should submit a curriculum vitae, stating teaching, and in the case of the Chair of Diagnostic Radiology, clinical experience, research interests and publications, and the names and addresses of three referees.
Further information should be obtained from the Registrar, Room 10, Bremner Building, University of Cape Town, Private Bag, Rondebosch 7700, South Africa.

University of Natal
DEPARTMENT OF BUSINESS ADMINISTRATION
Durban Republic of South Africa

Applications are invited from suitably qualified persons, regardless of sex, religion, race, colour or national origin for appointment to the post of

PROFESSOR AND HEAD OF DEPARTMENT

The salary scale attached to the post is: R17 100 x 750 - R18 600 x 900 - R22 900 per annum. The commencing salary notch will be dependent on the qualifications and/or experience of the successful applicant. In addition, a service bonus of 93 per cent of one month's salary is payable subject to Treasury regulations.
Application forms, further particulars of the post and information on pension, medical aid, group insurance, staff bursary, housing loan and subsidy schemes, long leave conditions and travelling expenses on first appointment are obtainable from the Registrar, University of Natal, King George V Avenue, Durban, 4001, with whom applications, on the prescribed form, must be lodged not later than 15th January 1981 quoting the reference Adv. D107/80.

Appointments Wanted

PROGRAM/PROJECT Management Matters humanist and social scientist w/bus. admin. degree; results-oriented problem-solver, energetic self-starter. Broad int'l exp. in project management, research, training, networking. Seek challenge in social/cultural development. Age 38. Swedish passport. Write No. U948V. The T.H.E.S. W.C.1.

Universities continued

OXFORD
SOMERVILLE COLLEGE
TUTORIAL FELLOWSHIP IN FRENCH

The College proposes, if a suitable candidate presents herself, to elect an Official Fellow and Tutor in French, with effect from 1 October 1981. (The College Statutes provide that all Fellows of the College must be women.) The appointment is tenable in conjunction with a University Lectureship (C.U.F.) with effect from, at latest, 1 October 1983.
Further particulars may be obtained from the Principal, Somerville College, Oxford, OX2 6HD, to whom applications with curriculum vitae and the names of three referees should be sent, to reach her not later than 28 November.

OXFORD
LADY MARGARET HALL
TUTORIAL FELLOWSHIP IN CLASSICAL LANGUAGES AND LITERATURE

Applications are invited for the above post, to be filled from October 1, 1981. The appointment, open to men and women, will be tenable in conjunction with a University Lectureship (C.U.F.) with effect from, at latest, October 1, 1983.
Further particulars may be obtained from the Principal, Lady Margaret Hall, Oxford OX2 6QA, to whom applications, with a curriculum vitae and the names of three referees, should be sent to reach him not later than November 17, 1980.

Personal

Administration

HULL
THE UNIVERSITY OF
ADMINISTRATIVE ASSISTANT (TWO POSTS)

Applications are invited for appointment to two posts of ADMINISTRATIVE ASSISTANT in the Registrar's Department. Candidates should have a good Honours degree and should preferably have some previous administrative experience. The post would be particularly suitable for a younger man or woman with some background of employment seeking a career in university administration. An interest in the production of printed publications would be an advantage for one of the posts.
Salary for both posts will be on the Grade IA for Administrative Staff, £4,795 to £9,505 per annum (under review), plus USS benefits.
Further particulars may be obtained from the Personnel Officer, University of Hull, Hull HU6 7RX, to whom applications (six copies) in the form of a curriculum vitae, giving details of age, qualifications and experience together with names of three referees, should be submitted by November 21 1980.

General Vacancies

Union View

Observations from another world

When Len Murray left Downing Street with his general council colleagues after meeting the Prime Minister recently, he spoke about what had transpired in No 10. The TUC view was that Mrs Thatcher had laid great stress on her concern about unemployment, but had not committed herself to any action to alleviate it or to halt the lengthening dole queues. Her argument was, apparently, that due processes had to be gone through, that whatever the pain of unemployment (to others, of course !), nothing could be done just now, the time was not ripe.

It is true that the time is never right for doing some things. As a class of phenomena, the "not just yet" tasks are met with at all levels in every walk of life. They also seem to have a set pattern of characteristics. First, it is generally accepted that the tasks are inevitable, in that they will have to be performed sooner or later. Secondly, pressures to get the job done usually arouse cries of genuine, heartfelt concern and promises to act soon. Thirdly, all these tasks are evaded by reference to a list of excuses, which grows in inverse proportion to the real will to do the job.

The excuses tend to fall into well-defined categories—there is a lack of money/there is a lack of time for proper consideration or preparation/there are more pressing priorities just now—you have heard or used these lines a thousand times. Procrastination, caution, call it what you will; the effect is always the same. The job is put off once more until tomorrow, today's best labour-saving device.

In the international scene it used to be independence for the colonies, now it is help for the Third World. All the ingredients are there. The generally held view that one day there will be a fairer sharing of the world's wealth; the frequent public statements on commitment to the idea of more aid; and then the excuses of why we cannot try harder to save the starving millions just now. "Let's put our own house in order first, to be the more able to help some time in the future, when the time is more appropriate, etc., etc."

Nearer to home it might simply be that bloody tap that is dripping, or the clutch that is slipping a little. "Yes, they will have to be attended to sometime, but, but, but . . .".

Between these two ends of the spectrum fall the great mess of jobs that can and must be tackled, but not today. Over the last decade in Britain, low pay and a reduced working week have been classic examples. Although there are many others in collective bargaining, for university manual and ancillary workers, both these issues have led to a great deal of resentment and frustration.

The take-home pay for an hour's work by these, your university colleagues, would scarcely pay for two pints of lager in most pubs. The actual rates range from £1.36 to a mind-blowing £1.72 an hour before stoppages such as income tax (no signs of V to Vestey here !) and the like. Two years ago we asked for a minimum rate of pay of £1.50 an hour or £60 a week, equal to two-thirds of the national average wage. Even now, we still have not reached that £60 figure. The current two-thirds formula would mean an increase to £80 a week, £2 an hour before stoppages.

We can guess the excuses for non-action this year: the economic climate, the not wishing to set precedents, the hands tied by the Government. The hands will presumably be tied to the hearts which will be so touched by our plight as we are told, "Of course low pay is totally unacceptable, we agree that the Clegg Commission led to only a 6 per cent increase in total earnings for manual workers, we really must do something about this *when the time is right*".

The reduction in the working week is likely to be another bone of contention this winter. I applaud the university employers who, last year, took a first step, however cautious, by conceding a reduction to a 39-hour week for manual workers from November, 1980. But we can already hear some with the same old excuses—commitment to the principle of further reductions, and acceptance that while new technology, massive unemployment, and rising expectations, plus the fact that other university employees have a better deal, a 35-hour week is very reasonable, it *is* not *possible* just *yet*.

On both these issues, low pay and the shorter working week, the tears for the less privileged are regarded cynically by our people when they see the salary levels and the condition of work of other groups, not least those on the "other side" and their peers. Our argument is the same as that for index-linked pensions and for a national superannuation scheme. We are reminded of the school dinner table where the server always seemed to have the largest portion of the limited resources in the chip bowl. At least he did not bleat about how much he felt the kid at the bottom of the table needed fairer treatment and a larger meal.

I am not asking for our masters to stop talking of their concern, but to go further than their "we would if we could" attitude and match their actions to their words. Not when times are more auspicious, not when there is more money available, not when things are brighter. Not when this generation of manual workers has retired or expired, but *now*.

Let us have an autumn of understanding. Try to understand what it is like to live on less than £55 per week; to understand what hostile feelings grow from disparate treatment and from the lie of equal percentage increases. But whether or not it is a winter of common-sense, let us see some progress. Do not put it off again. Let us see some action.

Mr Murray said that it was not simply two nations, but that Downing Street and Congress House were worlds apart. It has been pointed out to me that Tavistock Square is even further away and might, therefore, not even be in our universe.

Is there anybody out there listening?

Rodney Bickerstaffe

The author is a national officer of the National Union of Public Employees and secretary of the trade union side of the Universities Central Council for Non-Teaching Staff.

Defending the 'front end model'

One of the most abused figures in current educational allegory is the hapless "Front-End-Model". Moderate advocates of continuing education assert that, until the emphasis is shifted from initial front-end education to life-long educational processes, the country will never meet the manpower needs of a rapidly changing period. Extremists suggest that most front-end Secondary and Higher Education should be abolished, to be replaced by vouchers which the individual can take up at any time during life.

It is sad, when education *per se* is under such threat, and when the recent achievements of higher education, in particular, are being attacked, that educators are once again dividing among themselves, marking off various kinds of educational territory from each other. The tendency is particularly contradictory when it comes from those supporting "continuing education"—if "continuing" means anything it surely implies that initial education is the indispensable basis of what comes after.

I suggest that those committed to Continuing Education should see as one of their most important tasks the constructive reform of the Front-End-Model—it may have fallen from grace, become too readily available and therefore lost some of its pristine charms, but it is not beyond all hope.

Two or three recent developments give solid grounds for such hope. The Dip. HE survives, in spite of a good deal of scepticism and hostility, and is gradually developing a distinctive identity among students. Released from its original exclusive association with B.Ed., it is now explicitly seen by many staff and students as an intensive experience in "learning to learn", a preparation for a lifetime of personal and professional learning. It is true, of course, that too many Dip. HEs are still merely the "front-end" of a degree course, concerned to cram in as much respectable academic content as possible so as to ensure untroubled student progress on to another full-time course. However, the Dip. HE curricula of such institutions as NELP and Bradford College show what can be achieved by determined innovators.

Another change within Higher Education which should encourage those of us committed to the expansion of *both* initial *and* continuing Higher Education, is the development of "mixed-mode" courses, giving scope for students to achieve a qualification by various patterns of attendance, depending on individual circumstances. The CNAA has been commendably progressive in its validation of such courses in many polytechnics, following the pioneering work of Oxford Polytechnic. In this way, too, what Lord James used to call the "three-year gold standard" of higher education is being modified, and experience shows that this departure from rigid attendance patterns is by no means impairing the rigour of the courses concerned.

Although the changes introduced within TEC and BEC have not, it is fair to say, been universally welcomed, these Councils too, through their emphasis on "conversion" courses and experiential forms of learning, have begun to make some impact on the age-old patterns of vocational and professional education by encouraging technician and business curricula explicitly designed as points of *departure*, not final seals of approval.

What is *beginning* to happen, in fact, is that the irrelevant distinction between full-time and part-time courses (with all its associated status-implications) is being eroded. This tendency provides the best hope for a flourishing pattern of continuing education. As higher education redefines its student-market, moving away from the automatic gearing of content and methods to the 18 to 21-year-old student, it provides an increasingly appropriate first-step in the process of life-long education.

All of this is not to suggest euphoria or over-optimism. Much still needs to be done if the counter-productive dichotomy between continuing and higher education is to be avoided. The "re-entry" problems of students who come back into post-A level courses after years away from study are still underestimated. The Nuffield Foundation last year funded a study of these problems here in Sunderland, focusing on the need for tailor-made learning materials.

This showed that a preliminary "induction" period for such students is quite inadequate—that the learning and personal problems persist far beyond the early months. It is in such areas that the insights of adult educators could be of great assistance to staff whose work has previously been mainly with the 18 to 21 group. And yet, as I began by saying, antagonisms are developing among the very groups on whose concerted efforts the development of a continuing education system worthy of the name depends.

The term "front-end-model" is borrowed, I believe, from the jargon of life insurance. Perhaps, therefore, it reveals rather fatalistic assumptions about the life-span of the average continuing education student. Such assumptions are unfounded. Given the right start, a student will leave higher education not sated or intellectually moribund but eager to continue his or her education. Without a reformed "front-end", is there really going to be a market for continuing education?

Roy Cowell

The author is Dean of the Faculty of Humanities at Sunderland Polytechnic.

Don's diary

Sunday

Off to Leningrad in a foul temper; the Soviet Consulate has granted me a visa strictly for the duration of the European Cosmic Ray Symposium and not allowing the two extra days I had asked for, I shall have to cut conference sessions to see Leningrad. Furthermore the London Intourist Office proved less than helpful in arranging hotel accommodation, did not reply to letters, and the travel agency had to telex Moscow—at my expense. I succeed in picking up my hotel vouchers at the check-in counter, one hour before take-off where I arrive by taxi, as the much-advertised London underground service to Heathrow is not operating before 8.15 on Sundays.

Arrive warily at Leningrad Airport to be agreeably surprised by the efficient and friendly reception organized by the local Intourist in cooperation with the Symposium Organizing Committee. Customs officials not greatly interested in my baggage, but one of them expresses interest in the slides brought by a colleague who finds himself prompted to give the customs a short lecture on the origin of cosmic rays. Transport laid on by the committee brings us to a massive brand new hotel facing the Baltic, designed by Soviet architects and built by a Swedish consortium.

Monday

Conference opens with an address by Academician Vernov, now 70, still very much in charge of Russian cosmic ray research. The Man from the Ministry emphasizes Soviet policy to have distinguished scientists, fundamental and applied, on the staff of Polytechnical Institutes as well as of Universities. He believes that the interaction of cosmic ray research with space physics, nuclear physics and biophysics and the accompanying technology amply justifies this policy. An encouraging survey of the cosmic ray field is given by Academician Ginzburg: Cosmic ray research, often pronounced exhausted and dying in the past, has entered a new phase with the arrival of X-ray and gamma-ray astronomy; astrophysics has become more quantitative and more alive as a result. Theories (and controversies) abound, eg about cosmic ray origin and acceleration.

Are physicists the greediest lot of mankind? The rate at which food and wine disappear at the evening reception ought to be measured! The mean free path between colleagues wanting to meet again is far too large compared with that between colleagues and wine bottles and food dishes.

Tuesday

A rearrangement of the programme owing to the absence—for various reasons—of some invited speakers! There is an excellent simultaneous translation system at the plenary sessions in the morning, breaking down only when in the heat of discussion speakers do not use the microphone. All speakers use transparencies giving the gist of their lectures in English. Quite obviously some of them have not been teaching students for years, judging by the way they plonk themselves firmly between screen and audience, obscuring diagrams and text.

I manage to slip away into town to buy a Russian fur hat. There is a convenient metro station, but since I have just one hour only I am glad to be given a lift in an Intourist car accompanied by Yuri, a young researcher at the Institute. There is not much choice in the foreign currency shops, but the second shop has a hat reasonable in price and acceptable in looks and size.

Wednesday

Lively discussion at the morning plenary session: what is the origin of cosmic rays? Contrary to popular belief supposedly sober and objective scientists can become subjective, passionate and not averse to disregarding some unpalatable facts if they do not fit with preferred theories. Also, a bit of chauvinism does not come amiss if it can assist your advancement. Nobody questions the excellence of Soviet research in the cosmic ray field; yet it jars when a slide showing the present state of the art in measuring the highest cosmic ray energies omits the pioneering results of the Leeds Haverah Park group. Is this done to impress the Academicians present with the achievements of one Russian group? Fun and games, too, when the Durham-Lodz collaboration group talk about cosmic ray origin. What about the rays now known to come from outside our galaxy? We are told that these come from the next nearest galaxy, but for this to be so interaction probabilities have to be bent a bit to fit the model. And what about the missing energy balance?

Thursday

In the plenary session the leaders of two Russian groups very acceptably exceed their briefs to give survey papers and report exciting new results in the field of high energy interactions. Here cosmic rays serve as probes to test nuclear reactions at energies well above those presently available at accelerators. After a survey paper on gamma-ray astronomy we hear of exciting new experiments now being prepared and which employ a highly sophisticated new imaging technique.

I have an opportunity to speak to Academician Vernov whom I have not seen since the Munich Conference of 1975. He tells me that he has been very ill and required immediate surgery so urgent that there was no time for him to go to Moscow for the operation. I wonder whether this remark reflects on the unevenness of medical treatment in the Soviet Union and that the best medical treatment is available only in Moscow. The two French colleagues at the conference are eager to confirm this; they tell me what can only be described as a horror story of their own experience. In a motor accident near Rostov one of them suffered open fractures in both legs, but received no proper treatment in the local hospital, and it took two weeks of negotiations at the highest diplomatic level before he obtained a visa allowing him to leave the Soviet Union and to be transported to a hospital in France; his companion suffered a skull fracture and brain damage which was not diagnosed until he had arrived back in France.

Friday

Theoreticians' field day, mainly on cosmic ray acceleration. I get away early to have another look at Leningrad. The conference ends after lunch and there is an excursion to Petrodvaretz (Peterhof), the Tsar's summer residence. We go either by hydrofoil on the Neva or by bus driving through miles of new housing estates. The guide tells us that after a needless and wanton destruction of the palace after the siege of Leningrad the summer residence has been reconstructed and the final touches have been added only last year.

Saturday

An excursion is laid on to see the gold and other treasures, ancient and modern, in the Hermitage. Another opportunity to see the Palace Square rounded with the classic beauty of Rossi's palace. Transport is laid on to take us to the airport after lunch. Two hours before departure are required to complete all the formalities of the check-in. The Swedish crew awaits us in the plane. "Today's papers?" We are back in a different world.

E. W. Kellermann

The author has just retired from the post of senior lecturer in physics at Leeds University.

Laurie Taylor

"Sarah and Richard, eh?"

"*What's that?*"

"Not heard about them?"

"*No.*"

"Well of course can't say for certain if there's anything in it but according to Odgers there's all the usual danger signals. You know, secretary ringing up and someone at the other end of the line saying 'Why the hell should I know where he is. I'm not his keeper'. That sort of thing."

"*Perhaps he'd just gone out and she genuinely didn't know where he was.*"

"At nine o'clock in the morning?"

"*Possible.*"

"Three days on the trot?"

"*Mmm.*"

"And what about Lapping saying that he'd seen him downing pints in the students' bar?"

"*That doesn't signify.*"

"Does in my book. Drinking pints at half-past ten! You know as well as I do that he's an early evening Britvic man and then straight home for *Horizon*. And students as well. Any new-found love for students is a sure sign of trouble at home."

"*Well I suppose you're right. Tragic really. How long have they been together. Three? Four?*"

"Much less. I mean Richard just missed that SL at Cardiff in '71 and then moved out on Debbie a few weeks later. Met Sarah about October of that year, at the Dietetics Conference."

"*Oh yes. I remember now. Very sad. Two marriages down the drain in three years.*"

"Par for the course."

"*Surely not?*"

"Worked it out the other day. Twelve members of the department. Right? Well since we had the staff freeze it's become an epidemic. Seven breakdowns in three years and four new marriages. Place is beginning to rival Reno. And there's not counting Quintock."

"*Oh come off it. Geoff and Myra are devoted.*"

"That's just it. When did you last see them together."

"*Thursday. At the graduate reception.*"

"Notice anything?"

"*Absolutely not. They were together all the time. Hardly mixed at all. Inseparable.*"

"Exactly. Holding hands and canoodling. Sure sign. Public display. What did old Freud call it. Reaction formation."

"*But that's impossible to prove. Tautologous. You win either way.*"

"Well you just keep your eye on Geoff in the next few days and notice what time he comes down to coffee."

"*Yes?*"

"Exactly 11.15. Times his entrance. Regular as clockwork. Set your watch by him."

"*Hardly evidence of promiscuity. Prufrock was equally reliable and he . . .*"

"Ah, but who else arrives spot on at 11.15?"

"*Go on.*"

"Well, remember I said it first. The new student counsellor."

"*Really?*"

"You try and push your way between them. All namby-pamby round the cona jugs. It's why I always get here early these days. I tell you if you don't have your cup filled by 10 past 11, you stand there with your Kit-Kat feeling like Masters and Johnson."

"*I can't think what it all means. Makes you wonder if old Longford's Got a point, doesn't it? I mean what good do such immoralities do for anyone in the long run?*"

"Well, I don't know about the long run, but speaking purely for the moment, I don't know how the hell you or I would get through these coffee breaks without them."

LETTERS TO THE EDITOR

Engineering: the right age to choose

Sir,—Professor Alec Chisholm's remark on the responsibility of secondary schools for providing the universities with suitable "material" for the production of engineers was aimed at the teaching of science subjects in comprehensives. His comments—though they were not representative of the mood at the round table on Finniston—prompted me to some reflections. From primary school through to becoming a graduate engineer (electrical) I followed the Swiss curriculum which is quite similar to the French education system. I then worked in manufacturing industry in Switzerland, France and Britain where I met engineers from a variety of backgrounds.

I was very fortunate in that I could choose my subject, engineering, at the age of 18 from the whole range offered by the universities. I was not pushed into sciences or arts at an early stage, in fact, had I been asked to decide at the age of 14, I would have become an archaeologist, I loved Latin and history . . . and Schliemann. Two fifths of my peers at university came from schools which favoured the arts.

Adolescents in Britain make their decisions at a point in their education where mathematics and physics both look like very limited subjects; it is indeed difficult to give a 15-year-old an idea of the beauty of differential equations when he or she sees the whole class struggling with the basics of algebra. The interest of subjects like literature, languages and history is much easier to grasp and can be experienced through self-study. It is likely that potential engineers turn to other subjects because maths at school level is no challenge to them. A keen student of physics at 15 on the other hand will almost certainly become a physicist rather than an engineer.

Short of changing the entire education system for the sake of generating a few more—good—engineers (which the country desperately needs) there would be an alternative inside the universities: Science departments set up one-year courses for school leavers. During such a course a student with, say, two A levels in arts and one in chemistry will gain some insight into engineering, do a short stint of industrial training and squeeze in an A level in maths or physics. At the end of the year the decision between engineering and English literature should be relatively easy. A course of this description would attract students with many different backgrounds and—a vain hope?—the new ideas of the reformed.

Yours faithfully,
FELIX SCHMID,
15 Russell Road,
Whalley Range,
Manchester.

Sir,—You are to be congratulated on your initiative in setting up the round table symposium on Engineering: Finniston and the Future (*THES*, October 10). This made fascinating reading and provided a useful lead-in to the National Debate on Engineering Education which took place in the following week.

Unfortunately the panel assembled did not include anyone who could speak with authority on the significant contribution of the polytechnics to the education of engineers and technicians.

This was a strange omission. The Coordinating Committee for Engineering in Polytechnics (CCEP), which represents the polytechnic heads of engineering departments would have welcomed the opportunity to participate.

Yours faithfully,
T. D. EASTOP,
Chairman, CCEP,
Wolverhampton Polytechnic.

Recruitment for BEd courses

Sir,—Your headline and report of October 10, which argue that reduced recruitment for BEd courses beginning in 1980 endangers the future of the BEd may be very misleading.

Your reporter writes of failure by teacher-training institutions to fill "quotas" of BEd places. But she does not refer to that part of the DES circular to all such institutions (July 21, 1980: Balance of Provision) which argues against the continuation of BEd to overproduce in secondary non-shortage subjects. For example, the Leicester Polytechnic's school of education has scaled down its total BEd intake (in favour of PGCE) pending the establishment of a new BEd course in 1981 which produces secondary school specialists only in mathematics, French and home economics, and BSc (combined studies) specialists in science education—all subjects in which we know that our products are getting, and will continue to get, teaching jobs.

Moreover, our new primary programme is designed to fulfil the other recommendation of the DES's July circular, i e to produce only those primary teachers whose training gives them the basis of becoming "semi-specialists" in one of the areas for which subject leadership is needed in the primary school. Meanwhile, in the reduced entry of BEds admitted in 1980, we have for the first time a majority of students studying shortage subjects, with gratifyingly large groups in mathematics and science.

So from the 1980 figures you cannot yet argue for the disappearance of the BEd. Those institutions which successfully adapt their courses to concentrate on areas of known need will continue to bear witness to the truth that the BA/BSc plus PGCE route simply will not produce enough teachers in all the subjects which will be in demand even in the tighter market between now and the year 2000.

Yours faithfully,
PROFESSOR JOHN HONEY
Head of School of Education
Leicester Polytechnic

Sir,—I write in reply to Patricia Santinelli's article "Falling Recruitment put BEd's Future in Danger". I do not quarrel with the facts of the article but think that the time has come to speak up for the BEd and what it is doing. In common with the University of Exeter, we had no difficulty in achieving our recruitment target for the BEd this year. Moreover, our recruitment in mathematics and the experimental sciences was healthy. I do take the point that some public sector institutions found difficulty but, again, some did not, and reached their target with ease.

Last year, the faculty of educational studies at this university looked at all the evidence available to it and decided to plan a new BEd degree (four-year honours) to be introduced in 1981. Senate's subsequent approval of the recommendation underlines, I believe, an opinion that an integrated concurrent degree is a sound professional preparation for teaching—particularly for those who wish to concentrate on the age range 8 to 13. Moreover, there was wide consultation with representatives of teachers, local authorities and other educational establishments and the course reflects a considerable measure of general agreement.

Evidence is beginning to accrue showing that apart from teaching the BEd is a degree just as good as most for starting a career in commercial or industrial management or, indeed, some professions. I believe that neither the schools nor our students fully recognize this fact as yet, but a degree which is deeply rooted in science and the humanities, emphasizes social and verbal skills and concentrates upon team work, must be extremely relevant in the context of modern day society and its transactions.

There must, by this time, be some 55,000 BEd graduates. I think that the value and popularity of the degree has been demonstrated and with many of my colleagues consider that it will continue to be awarded.

Yours faithfully,
PROFESSOR
GORDON LAWRENCE,
University of Warwick.

Polytechnic truth

Sir,—Your "defence of polytechnics" (editorial October 17) fires off with the totally unsubstantiated claim that they are acquiring a negative public reputation. While not being very sure what sort of an animal a "negative public reputation" describes, your premise does not surprise me in the least in view of the well known acquisitive tendencies these establishments have developed over the past decade.

What does surprise me is your belief that the nub of the criticism levelled at the polytechnics is alleged leftist sedition and a drift into "second rate" university status. Now, you know, if this had been written by a polytechnic director on the run, desperately anxious to cover his tracks and thus, predictably, spending more of his generous hospitality allowance on red herring than pink gin, he would deserve a first class in Litterae Humaniores (or even a small medal).

For the truth is, and in drawing attention to it I am in no way being derogatory, that among the public at large the polytechnics have virtually no reputation whatsoever. Few people in the street could tell you why the polytechnics were created or where precisely they fit into the educational scene. Schools, "techs", universities—these are comprehended, but polytechnics? Nine out of 10 persons, when the question is put, will opt for "big techs" by way of identification. Leftist sedition? Much more likely to be associated in the public mind with Essex or LSE. Second-rate universities? Good A level candidates (and their parents) are rarely persuaded by this comparison nor are employers bent on graduate recruitment. "Social philistinism", "academic mediocrity", it is all there in this infamous coat trailing editorial—but significantly no hint of the real achievement, of which the polytechnics themselves are strangely reticent and which needs no defence.

I refer of course, if one may mention the unmentionable in forthright terms, to the quite outstanding success of the polytechnics over the past decade in the work of advanced further education and training. Their unique contribution to further education has established them as pacesetters and their true role is patent however woolly the objectives of those who made the creative political decision in the late 1960s. They are forward looking, compete strongly (and justifiably) for the lion's share of further education resources, and take pride in having established a limited measure of autonomy in the way of freedom from detailed local authority control. Like most ambitious progeny they do, on occasion, lose their way—but then, the path has never been very clearly signposted and a little harmless scrumping in the orchards by the wayside can be forgiven them.

Yours faithfully,
G. G. THOMAS,
West Farm Close,
Ashtead, Surrey.

Divide and weaken

Sir,—Silvan Jones's letter (*THES*, October 17) suggests that "everyone benefits" from the situation in which Natfhe and APT "are in competition to provide better and better services for their members". My experience suggests that exactly the opposite is true; much of my time as a branch secretary of the ATTI at the point when the APT emerged was engaged in countering misleading and divisive propaganda from the APT, a task that made work in such crucial areas as casework and the protection of members' interests during a complex merger less effective than it could have been.

That was in a previous institution; in my present polytechnic we are still trying to obtain the implementation of a negotiated conditions of service agreement after many years of work. The APT's contribution to this task, at a time when conditions of service have never been more needed, appears to be limited to arguing that as we are all professionals (management and staff!) conditions of service are irrelevant to us.

At a time when our salaries, conditions of service, and jobs are under attack we need to speak with one voice. That is why when I was a university teacher I belonged to the organization that represented most university teachers—the AUT—even though I had more sympathy in some ways for the policies of ASTMS which at that time was recruiting amongst university teachers. Natfhe has the ability to speak with this single voice, and it has close links with the *NUT* and the AUT. The APT argues for more pay for polytechnic teachers at the expense of further education teachers—a divisive policy that will, if ever successful, divide and weaken *all* teachers in further education.

Yours faithfully,
JEREMY HAWTHORN,
Sunderland Polytechnic.

Scholarships' function

Sir,—Much of the current discussion about scholarships and exhibitions at Oxford seems to leave out of consideration one of their principal, if unacknowledged, functions. When I was awarded an exhibition in 1963, the £40 per annum I received was not a negligible amount; indeed, it contributed to my incipient bibliomania by paying a good proportion of my bills at Blackwell's. The face value of scholarships in 1980 has not risen, and they are therefore no longer of much financial significance. What, then, are they for? As your correspondent says (*THES*, October 10), "they act as a sign of prestige, denoting excellence, and as a device to redistribute candidates of talent". But in addition to this they are an intangible but nevertheless real reward for hard-worked sixth-form teachers, for whom this is often about all the recognition they get. To abolish scholarships, or to award them at the end of the first undergraduate year, would destroy this. Writing both as lecturer at a not-so-ancient university and as a former maintained school sixth-form master, I do wonder whether scholarships are really so harmful. But I suppose they encourage elitism, and we cannot have that.

Yours faithfully,
D. O. MORGAN,
97 Camberwell Grove,
London, S.E.5.

Presidential facts

Sir,—May I add some material facts that put a rather different light upon the allegations of Dr John Helmer (*THES*, September 19) about a new book of mine, *Presidents and Prime Ministers*.

Whereas Helmer alleged that the book was angled to support a Ronald Reagan cause, in fact, the foreword was written by Richard E. Neustadt, a prominent Kennedy Democrat; American Enterprise Institute sponsorship was handled by Dr Austin Ranney, well known as a Humphrey Democrat, and the undersigned editor was identified in the text as a Truman Democrat.

Anyone trying to comment on John Helmer's views on the presidency might find it difficult to know what they are. On the one hand, he has attacked the presidency for treating war-making as a "sport" or "institutional recreation". On the other hand, for the past three years Helmer has happily worked in the executive office of the President—presumably in a non-recreational capacity.

Yours faithfully,
PROFESSOR RICHARD ROSE,
University of Strathclyde,

Poly law course

Sir,—I refer to the article "Report will accuse Huddersfield staff" (*THES*, October 17). In this, the impression was given that the BA/BA(Honours) in business law was not allowed to start this session. This is erroneous. The course enrolled its first intake of students in September of this year with the approval of both the CNAA and the academic board of the polytechnic. The demand for the course was high and recruitment to it was strong.

Yours faithfully,
N. A. BASTIN,
Head of Division of Law,
Huddersfield Polytechnic.

Faculty's response

Sir,—John Walshe's report on the proposals to increase student numbers at Trinity College, Dublin (*THES*, September 19) omitted the response of the largest faculty in the college. At its meeting on April 25 the faculty of economic and social studies unanimously rejected the proposals.

Yours faithfully,
SEAN D. BARRETT,
Trinity College, Dublin.

Letters for publication should arrive on Tuesday morning at the latest. They should be as short as possible and should be written on one side of the paper only. The editor reserves the right to cut or amend them if necessary.

TIMES PAST THE TIMES
HIGHER EDUCATION SUPPLEMENT
New Printing House Square, London WC1X 8EZ. Telephone 01-837 1234

The future of humanities

The tentative quality of the recently published report of the commission on the humanities established by the Rockefeller Foundation and chaired by Richard Lyman, Rockefeller's new director and former president of Stanford, displays all too acutely the dilemma of the humanities within higher education, so central to the traditional, almost ideological, mission of the universities and other institutions yet so apparently peripheral to the detailed operation of the knowledge/credentials machine that higher education has become today.

This dilemma is much more explicit in the United States than in Britain. On the other side of the Atlantic the very word "humanities" has a resonance that the anaemic term "arts" lacks. There the word does not simply describe a range of subjects like history, philosophy, or English, but expresses an often quite cohesive commitment to humanistic teaching and research and even at its widest extent to the values of a civilized society (which its critics might call refined instead). Arising from this difference is the degree of altruism that can still be found in American universities and colleges, a quality that is much less clear in a professionalized British higher education.

Of course, the enthusiasm for liberal education to which this conception of the humanities and commitment to pedagogical altruism both contribute can be dangerous. Obviously it can lead to the pitfalls of superficiality as in "great books" courses or incoherence as in the all too numerous cafeteria course structures that happily mix Botticelli and botany, Marx and Marks. It also runs the very great risk of becoming intellectually flabby by deviating too far from the mainstream of scholarship.

But all alternatives to the professionalization of knowledge run similar risks. Certainly any attempt to establish a socially determined ideology of knowledge, whether in the interest of revolution or of manufacturing industry, is attended by the same dangers of superficiality, incoherence and philistinism. Just as the latter attempt should not be abandoned because of these obvious dangers so the traditional enthusiasm for liberal education should not be denigrated.

A third, and perhaps most crucial, difference between America and Britain is that in the former there exists, at least in most states, a mass system of higher education. There it is no longer possible to imagine that the majority of students will go on either to become professional scholars or, even in the most diluted form, to occupy positions of traditional leadership in society. In Britain, with a much smaller proportion of the age group in higher education, such illusions are still faintly possible.

As a result of this difference American higher education has to be seen in the context of mass education for citizenship, which leads in turn to interesting questions about curriculum and content: in Britain higher education can still be seen as directed almost entirely by changes in the disciplinary bedrock or by clear professional requirements. As a result any attempt to offer broader liberal education is confused to the periphery of DipHEs and colleges of higher education within higher education, and higher education itself, with the shining but partial exception of the Open University, sets no example to adult education about how to satisfy the learning ambitions of the mass of the adult population.

There are at least two reasons for supposing that this will change in the remaining 20 years of this century and that liberal education may become of greater significance to the next generation of students than to the last. First, the division and sub-division of disciplines, which will be the natural consequence of advance in research and scholarship, will make it more and more difficult to organize undergraduate curricula round rapidly changing and essentially arbitrary (from the point of view of teaching) changes in the classification of knowledge.

Secondly, the increasing pace of technological invention will undermine the functionalist appeal of many initial courses in such subjects. Who, after all, wants to be taught last year's technology? Thirdly, the perhaps delayed but certainly still necessary struggle to expand higher education opportunities in Britain can only be successful if universities, polytechnics, and colleges offer less academically austere courses. For all three reasons there is likely to be a retreat from the particular back to the general, from the voracious assimilation of knowledge to its integration within a framework of values and ideology.

The question arises about what form this integration or synthesis might take. In the past it has usually been assumed, blithely in Britain and with conviction in America, that the humanities remain the most appropriate agent. Yet their continuing narrowness is an important obstacle to the maintenance of this ambition. Their reliance on socially exclusive institutions and their commitment to similarly elite intellectual styles, and their resistance to the claims of the natural (and to a lesser extent social) sciences are examples of this narrowness.

The result is that today the humanities have a rival as an intellectual synthesizer which may appeal to a few naive radicals on the grounds it is more "modern" and certainly appeals to conservatives as less subversive and critical than the traditional humanities. This rival is an approach to general education based on the amoral techniques of systems analysis and other intellectual styles derived from management education with their concentration on process rather than content.

There are perhaps two lessons to be learnt from the American experience. The first, a positive one, is that the humanities cannot be expected to thrive if they are forced to the back of the resources queue by apparently more "scientific" rivals. The National Endowment for the Humanities, which is much more than a research council, is a model we in Britain could well follow. The second, and negative one, is that the humanities cannot thrive if they are cut off from the academic mainstream and diverted into vacuous "great books" and cafeteria courses.

But the third, and most important lesson, must be self taught. It is to try to redefine the role of the humanities (and perhaps to reemphasize the centrality of history, literature, and philosophy within it) by breaking its present bond with a privileged social and intellectual order and by incorporating within it a new emphasis on both science and social action. In these terms the humanities might survive the assaults of the "systems men" and remain vital into the next century.

Natfhe's road to recovery

This week Natfhe has produced a policy statement that is rather outside the normal run of such statements. Its subject is the economy and public policy and its target the monetarist policies of the present Government. In the statement Natfhe tackles head-on difficult and controversial questions related to public expenditure, taxation, manpower planning, and monetary policy and unemployment. The association then urges an alternative and radical policy based on full employment, a renewed emphasis on planning, an enhanced public utility, and greater democratic participation.

Natfhe's initiative provokes two questions. The first is whether a teachers' union should express opinions on such clearly political matters at all. Although the association's more conservative members will probably grumble that it should not (and given adequate opportunity the APT may stir the pot of this discontent), the answer should be an unambiguous yes.

Far too often the "non-political" trade unions of professional workers have failed to speak up on broad political questions but continued to argue that, whatever the overall economic policy adopted, theirs is a special case. The result unfortunately is sometimes a parrot policy of "no cuts" combined with a mentality of political schizophrenia. At least Natfhe is trying in this statement to show the political and economic context in which a "no cuts" policy could be made to work.

The second question is whether Natfhe's alternative strategy is the right one. Here there is more room for doubt. The association's recipe for recovery has some undesirable and also mutually inconsistent ingredients. For example, greater democratic participation does not fit easily with the ascent into quangoland ("structured planning bodies"). But it is becoming difficult in view of the growing failure of the constricting and traditionalist policies pursued by Sir Geoffrey Howe and before him by Mr Healey to dissent from Natfhe's chief remedy, a return to full employment aided and controlled by prescriptive planning.

Freedom within sponsorship

"Academic Freedom" is no nabob, least a term that academics have become increasingly reluctant to use it. It is nevertheless surprising that there has been so little reaction to an incident that occurred during the summer at Exeter University, when half a dozen Israeli academics were prevented from attending a symposium on Saudi Arabia because their presence would be politically embarrassing.

The Zionist Federation of Great Britain has protested to the university and implicitly linked the ban on the Israelis to the large benefactions the university has received from Arab states. The university responded by denying the allegations and maintaining that the Israelis were excluded only because of limited space at a small symposium.

The truth lies in between the two claims. There is no evidence that the benefactions to the university—some £750,000 for a new library and substantial endowments to the Centre for Arab Gulf Studies—were a direct cause of the Israelis' exclusion. But inquiries by *The THES* have produced unambiguous evidence that the Israeli academics were barred because the university was anxious not to offend prominent Saudi dignitaries attending the symposium.

Was the incident an infringement of academic freedom? It would be easy for British academics to be complacent. There are clearly no visible political strings tied to the funds that Exeter receives from Arab states; the organizers of the symposium probably believed they were exercising simple political tact by avoiding personal confrontations which could have wrecked their discussions.

But the question which Exeter, and other universities, must resolve is this: how many times can they make pragmatic accommodations to the political sensitivities of their sponsors before vitiating their claims to be independent places in which reason is autonomous?

Between the planner and the futurist

William Taylor

Youth employment is on everyone's agenda. Scholarly analyses of why it is running at such a high rate vie for space with high-minded sentiments about waste of human potential and crude fears of violence in the streets. The problem is by no means limited to this country. Over the past decade or so reward differentials between workers of different ages have been eroded. High wages and low productivity make young people a bad bargain for employers. In times of uncertainty and diminished profitability, the investment element in training a younger employee is difficult to justify. On the supply side, it is frequently alleged by employers that new recruits lack the dispositions and skills that would make them useful workers—although research in this country suggests that the employer dissatisfaction has been exaggerated. Young people themselves are more selective, less willing to accept a vacancy that does not appeal to them, better able to survive on the benefits payable as part of a complex system of transfer payments, supplemented by the incomes of other employed members of families.

What are the implications for long-term educational policy? One central issue is readily identifiable. Should our educational strategies be based on the assumption that youth unemployment is short-term and cyclical, or that it is likely to endure or become even worse in the decades ahead? The kinds of provision we make in the one case may be totally inappropriate in the other.

The social, political and educational stakes are much higher in the case of long-term unemployment. If the problem is only cyclical we do not need to rethink our ideas, reassess our values or restructure our institutions. To be sure, we still have to find better ways to motivate for education and training young people who at present are either alienated or persistent truants before the age of sixteen and frequently unemployed after it. We have to identify the kinds of skill and knowledge likely to be needed by graduates, and provide relevant and effective preparation. We have to improve the flow of information, the so-called "signalling system" between education and the labour market, ensuring that young people receive the best possible advice about the occupations open to particular levels of performance and qualifications; and help industry and commerce to make the best possible use of the talents of their employees.

For if the prospect is one of long-term, technological unemployment, in which a high proportion of both young people and adults can expect to be without paid work for shorter or longer periods throughout their post-school lives, then the educator's task is a daunting one. It demands no less than the reconciliation of a radically reformed work ethic with structures of merit and reward which several hundred years of trade and urban living and industrialization have made us familiar, and a reassessment of personal identities other than in terms of income and occupational status. These are the kinds of things that may have to be tackled if long-term structural unemployment is to be tolerable and tolerated within a social and economic system that remains, in large part at least, based on the market and which allows freedom of expression and personal mobility to its members.

Of particular concern to the educator is how a reassessment of the value of work, and of beliefs and identity based upon this value can be incorporated into the curriculum and organization of schools, colleges and universities, *without* undermining the way in which men and women acquire and learn to practise socially responsible attitudes and behaviour. The values and satisfactions associated with setting of objectives and the successful performance of tasks, concern for accuracy and high standards of personal performance, respect for persons and all those other things that have hitherto been associated with a society in which work was the norm and leisure smacked of sin, have somehow to be protected and made valid in a new context.

Educators have, of course, found it easy to argue for a revaluation of leisure, to extol the delights of freedom from the rat race of nine-to-five employment and careers and the beauties of a simpler, more self-sufficient pastoral lifestyle. For many, the question of how this "leisure" is to be paid for appears to come within the category of "the Lord will provide" or "that's not my department". For others, the kind of microchip and robotized world that will permit shorter working hours, recurrency between work, leisure and education, mid-life retirement and long-term sabbaticals, will by definition generate such enormous economic surpluses as to ensure plenty to go round, even for those who by inclination or lack of opportunity are unable to make a direct economic contribution.

But today's world is not like that. Failure to sustain a growth rate commensurate with these rosy scenarios of a rich and leisured world on which some educators' remedies depend is already a present reality. It has been tempting in this country to embrace the nostalgic image that others have of us as a society in which economic considerations take second place to quality of life.

Yet economists of both left and right concur that deindustrialization is not an option for an economy such as our own—not, that is, if current and likely future levels of social and personal expectation are to be met. There seems little disagreement that, despite our level of investment in research and development relative to GNP, Britain has seriously under invested in new technology and in the nurturing and development of dispositions appropriate to successful industrial competition.

All this imposes strains on educational values, pulled in the one direction by the need for relevant skills and knowledge, by the imperatives of technological advance and the need for early and enduring personal commitment to skilled performance, and on the other by the needs and imperatives of a society in which continuous and life-long paid employment may be for many no longer a realistic expectation.

Educators cannot predict the future circumstances of their students, they cannot control the extent to which external circumstances and chance will determine subsequent occupational opportunities, destinations and life styles. We cannot hope for the establishment of clear one to one relations between particular kinds of educational input and subsequent gains in worker satisfaction and personal fulfilment. It is precisely this uncertainty that in the past has been used to justify a general rather than a vocational education, a broad preparation for a variety of unpredictable subsequent conditions, rather than specific training for a task that in five, 10 or 20 years may no longer exist. At the back of every teacher's efforts, at every stage of education, lies the faith that the more literate, numerate and socially aware the student, the wider the range of personal, social and occupational skills at his or her command, the greater the confidence and capacity for coping with adversity, then the more likely is the securing of a sure foothold in the world of work, the possibility of identifying with and gaining satisfaction from non-work activities and rendering better service to family and fellows. The path that lies between the pressing demands of the manpower planners on the one side, and the radical visions of the social futurists on the other may be narrow, but it is the only one the educator can tread with good conscience.